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ORIGINAL DEPARTMENT.

LECTURE.

SUDDEN DEATH IN TYPHOID FEVER.

BY M. BLACHEZ,

Physician to the Hôpital Necker.

GENTLEMEN: This accident is by no means rare. Already more than one hundred observations are on record, and yet, until within the past fifteen years, this mode of termination has hardly been noticed in French works on the subject. Chomel and Andral each mention one case, but without devoting any particular attention to the subject.

In 1864 Zenker (of Leipsic), in a memoir on the muscular lesions observed in typhoid fever, insisted on the degeneration of the muscular fibres of the heart, a condition already noticed by Laennec and Louis, and particularly by Stokes, in malignant typhus. The subject had then attracted little attention, until M. Dieulafoy made it the subject of his thesis, in 1869.

Since then the researches have been numerous, and the same year appeared the work of Hayem on the muscular alterations in febrile conditions. Among the other works relating to the subject are the memoir of Laveran, in the *Archives de Médecin* for 1871; several articles by Liebermann which appeared in the *Gazette des Hôpitaux* in 1877; the thesis of M. Tambareau and that of M. Rabère (1878), in which sixty observations are analyzed. All the necessary indications may be found in a memoir by M. Huchard, which appeared in the *Union Médicale*, in 1877; in this work all the theories brought forward to explain the sudden death are analyzed and discussed.

I have been led to study over the literature of the subject by the observation of a case where I suffered a sad surprise.

The fatal termination in this case supervened under somewhat different conditions from those usually observed. We will give the observations in detail, and end by certain considerations suggested by it regarding the mechanism of sudden death in typhoid fever.

Obs.: Mme. X., thirty-five years of age, tall and thin, delicate while a child, but enjoying fair health since her tenth year. She has had three children, of whom two are living and in good health. She is in comfortable circumstances, living in the country. On Feb. 22d she suffered from slight malaise attributed to a cold contracted at the theatre.

There was slight fever, with the ordinary symptoms of gastro-intestinal derangement. No benefit was experienced from an emetic, and slight diarrhœa supervened.

Notwithstanding her slightly febrile condition, Mme X. was able to preside at a dinner of twenty persons on Feb. 27, and partook, without nausea, of light food.

On the next day, however, the diarrhœa was more troublesome, the matters passed being slightly tinged with blood; there was also slight griping. This diarrhœa very soon ceased under the influence of treatment. After March 2d there were three stools daily, of almost solid consistence and dark colored.

The pulse oscillated between 84 and 92 per minute; the temperature never went above 100° C., in the evening and fell in the morning to the normal standard. There was no pain on pres-

sure over the abdomen, no meteorism and no spots.

The tongue was red and the papillæ prominent; no râles in the chest.

Notwithstanding that the general symptoms did not seem to be of great gravity, the patient complained of being excessively feeble. She was very much depressed in mind and dreaded a fatal termination. She refused any sort of substantial alimentation.

He first considered it a case of gastro-intestinal catarrh, prolonged and aggravated by the dinner of February 27th, but on March 4th a few cuticular, rose-colored spots appeared on the belly. There was on several occasions very slight epistaxis. The diagnosis was no longer doubtful, and extract of quinquina, in potion, was ordered.

On March 5th she passed a good day, was able to take some light soups and milk, and remained in a pleasant frame of mind all day, the temperature remaining at 100.4°. On the morning of the 6th she woke about seven o'clock, after a tranquil night, and told her husband that she felt well but very weak. She asked for a glass of milk, and hardly had it swallowed when she complained of sickness at the stomach and desire to use the stool. It was brought to her and she was just about to use it when she fell back on the bed, and died without a struggle, after a slight contraction of the lips.

Every means of resuscitation were employed without success; the heated hammer was applied and energetic frictions with mustard over the entire cutaneous surface.

Death was instantaneous and without the occurrence of any apparent hemorrhage.

This was evidently a case of death by syncope; the hypothesis of an embolus, which first presented itself, was untenable, as there had been no dyspnoea or apparent asphyxia.

Comparing this case with others of the same kind contained in the works we have mentioned, we remark many points of similarity, but some also of difference.

In the first place, in most of the cases here recorded, where sudden death supervened, it occurred during the period of convalescence. It is at this period, when the disease is supposed to have terminated and the patient on the road to definitive cure, that death brutally supervenes to destroy the best founded hopes.

There is one observation only recorded by Liebermann where death occurred on the sixth day. In this regard our case differs from those ordinarily observed, for it is impossible to carry

the debut of the malady further back than February 22d, and it was on March 6th, that is, on the twelfth day, that death supervened.

We observe that the authors concur in the opinion that these sudden deaths seem to supervene chiefly in the milder forms of the disease. This circumstance is habitual but not absolutely constant. From this point of view it would be difficult to meet with a milder case than the one we have reported. The temperature, observed with care, was never higher than 100.6°; the patient was able a few days after the début to preside at a dinner which lasted two hours, and the very day preceding her death the general condition was so good and she recovered her appetite so well that we were inclined to believe ourselves in presence of one of those abortive forms of typhoid fever observed in acclimated subjects living under good hygienic conditions.

The rather varied explanations given for the occurrence of sudden death in typhoid fever, and which have been so well discussed by M. Huchard, may be ranged under three principal heads: 1st. The theory of reflex action (Dieulafoy); 2d. That of cerebral anæmia (Laveran and Bussard); 3d. The theory of myocarditis (Zenker); that of myocarditis with proliferating endarteritis (Hayem).

In the first theory the reflex action would have as point of origin the intestinal lesion. The excitation is transmitted through the sympathetic nerve to the cells of the medulla and bulb. There it is transformed in motion, following sometimes the course of the pneumogastric, sometimes that of the other respiratory nerves, whence the arrest of the respiration or of the action of the heart.

This ingenious theory, based, according to the author, on physiological and clinical facts, is with difficulty sustained against the objections brought forward by M. Huchard.

In effect, according to this hypothesis, death should correspond with the period when the lesions are most marked, and not with that of their reparation. Syncope again is not observed in certain maladies where the nerve filaments of the sympathetic are seriously inflamed, as in peritonitis and dysentery. Sudden death has been frequently observed in typhus fever, when the intestinal lesions were wanting. For these reasons the hypothesis of reflex action, having its origin in the intestines, is, at least, insufficient of itself to explain the occurrence of sudden death in typhoid fever.

As regards the theory of cerebral anæmia, it does not account for the persistence or gravity of

the syncope in typhoid patients. Cerebral anemia exists in many cases of marked cachexia where syncope succeeds on syncope without causing death.

It is well known, also, that the bulb and middle brain (mesocéphale) which have so direct an influence on the circulation, conserve their functions in the most marked cases of encephalic anemia, on account of the very free vascular anastomosis of blood vessels existing in these portions of the brain substance.

The very great importance of the muscular lesions in the various fevers, particularly in typhoid fever, cannot be contested.

Hayem has shown how much this fatty, granular degeneration, studied by Zenker and Waldeyer (1864 1865), is promoted by a peculiar alteration of the blood vessels, which he has made known under the designation of proliferating endarteritis; this endarteritis causing the obliteration of the small arteries supplying the muscles of the heart itself, through the production of small thrombotic clots.

The principal objection brought forward against this theory is the fact that the cardio-vascular alteration described was wanting in several cases where it had been sought for with the greatest care.

M. Hayem affirmed, it is true, that he has in all cases found this alteration of the muscular fibres of the heart in cases of sudden death in typhoid fever. But it should be remarked that in the cases of variola where MM. Desnos and Huchard found analogous alterations, sudden death is much more rare than in typhoid fever; a fact due, perhaps, to the relatively short duration of smallpox.

We have not yet spoken of the thrombi or emboli found in analogous cases. The cardio-vascular degeneration and the peculiar state of the blood, evidently are of importance in the production of these coagulations; but they are far from being constantly found, and kill rarely by syncope, but rather by asphyxia, more or less rapid.

It may be concluded from this summary exposition, that the anatomical explanation of sudden death in typhoid fever is yet far from being satisfactory. There is no reason to believe in any one exclusive theory. M. Huchard is of opinion that the anemia of the brain, taken in conjunction with the degeneration or simply ischæmia of the heart, will explain the occurrence of this symptom in most cases. Whatever the theory, is it not remarkable to observe these fatal syncopes supervene in cases so different from a clinical point of view?

If the period of convalescence seems to be that of predilection for these sudden deaths, it is none the less true that these symptoms are observed more frequently in mild than in more serious cases. Or, it would seem that the various degenerations noted as causes of sudden death should be much more marked in subjects worn out by a long morbid process and all the symptoms incident thereto.

And yet the patient in our observation was in excellent health twelve days before her death. The fever was exceptionally mild. It is difficult to suppose the existence of any advanced cardiac alteration in a woman who had always enjoyed good health, and who, during her short illness, had presented no trouble of the circulation except feebleness of the pulse, but without any intermittence or irregularity.

This intermittence of the pulse with tendency to syncope had been remarked in many cases as precursors of sudden death. We were struck by the extreme discordance between the benign and almost apyretic malady and the extreme lassitude, pallor, and in fact, almost collapsed condition of the patient.

On this account, from the first days, we renounced every form of debilitating treatment, and administered wine, quinine and coffee.

This conduct is recommended by all the authors who insist on the employment of every possible means to sustain the strength of the patient.

We were very far indeed from expecting, with but just the symptoms ordinarily observed in nervous impressionable subjects, the sudden and, as it were, brutal termination, supervening in a young, vigorous and long acclimated patient, living under the best possible hygienic conditions.

COMMUNICATIONS.

THE LATE EPIDEMIC OF CATARRHAL FEVER IN PHILADELPHIA.

BY HUGO ENGEL, A.M., M.D.

Since the beginning of March of this year our city has been visited by one of the severest epidemics of catarrhal fever that has ever played havoc among the sedate inhabitants of the Quaker City; severe less on account of the number of its victims—death being generally caused by that fell destroyer and boon companion of influenza, pneumonia, or by the disease attacking the aged and those enfeebled by chronic ailments—but severe on account of the tenacity with which the *grippe* held on to the banks of both Delaware and Schuylkill, and on account of the ever vary-

ing symptoms under which this baneful complaint chose to manifest itself.

While one person, when suffering from this disease, would sneeze and sneeze, till his stock of handkerchiefs was exhausted, another complain of intense headache, a third of a stitch in the side, a fourth of an irritable cough, a fifth of pain in the stomach and nausea and vomiting, a sixth, perhaps, of disturbance in respiration and restlessness at night, they all very soon experience certain symptoms alike: fever, with an increase of temperature to 102° – $104\frac{1}{2}^{\circ}$ and an indescribable weakness, which seemed to befall the mental faculties as well as the motor impulses and the muscular system, while the afferent nerves were wide-awake and carried impressions with a rather painful vigor to the general centre of common sensation. The fever would occasionally commence with chilly sensations, and mostly reach its acme within two or three days, and usually continue at the height gained, with slight morning remissions in favorable cases, till the beginning or end of the second week, when more or less defervescence would indicate the anxiously looked for but frequently tedious convalescence. The general debility set in very early, and twenty-four hours after the appearance of the initial symptoms an apathy could be observed in the patients, which rarely shows itself so early in any other disease—indigestion from over-indulgence in not strictly temperate drinks perhaps excepted. Gloomy forebodings, occasional delirium, sleeplessness, were so many indications of the disturbed condition of the brain, while the often most intense headache, the severe neuralgia, and the not less painful hyperæsthesia, showed the irritable state of the sensory nervous system. In the vast majority of cases the progress of a poisonous substance along the mucous membrane of the whole respiratory tract could, during the course of the disease, be plainly traced; mostly beginning with irritation of those fibres of the fifth nerve that spread over the Schneiderian mucous membrane of the nose, occasioning sneezing and discharge of mucus from that prominent organ; this was followed rapidly by a mild sore throat, which in turn was succeeded by coughing, and the careful auscultator could frequently hear the mucous and dry râles becoming smaller and smaller from day to day, till a subcrepitant râle left him in doubt if it were not crepitation signifying the engorgement which generally denotes the approach or the first stage of pneumonia. This complication, as we in several epidemics of catarrhal fever had opportunity to note, may be of

a threefold character. In the one we have only the subcrepitant râle, then a feeble bronchovesicular murmur over nearly one whole lobe (always the lower) of one side, while on the opposite side the respiration seems harsh, almost puerile in character; the clearness on percussion over the spot of feeble breathing is slightly impaired, but no further alterations are observed except a gradual return to the normal sound, accompanied by free expectoration. It always seemed to us as if in these cases exudation collected in the middle-sized and finer bronchial tubes, and as if there was not sufficient strength in expiration to expectorate the sticky, not as yet liquefied masses, and not power enough in inspiration to fill this lobe with air, which could not easily make its passage through the clogged channels. Such a case I have never seen end in pneumonia, and when the signs mentioned—subcrepitant râles, feeble respiration over nearly a whole lower lobe of one lung and slightly impaired percussion note—were present, it has become my habit, in influenza, to listen more carefully to the other lung, when the harsher breathing would always satisfy me of the existing state of affairs. But if the signs spoken of were confined to a comparatively small part only of a lobe, and the other lung would contain a symmetrically situated and similarly weak place, then I knew that the further progress of the complication would be the development of bronchopneumonia. And if the apparent subcrepitant râle sounded like the well known crepitation, heard best at the very beginning of inspiration, and if this was followed within twenty four hours by a rapidly progressing dullness confined to one whole lower lobe, then I felt convinced that I was unable to prevent—though not to guide—the onward march of croupous pneumonia. The first lung complication is rarely absent in a fully developed case of gripe; the second is often met with in the very young and very old, and may lead to serious trouble; the last experience has taught me to consider a very dangerous, and in the old *invariably fatal*, complication of influenza. On account of treatment as well as of prognosis, the distinction of these three lung complications is important.

No matter how manifold the picture catarrhal fever may present, all the forms of this epidemic disease can be classed under one of the following heads:—

1 *The Nasal Variety*.—The individual attacked has chilly sensations, followed by fever of moderate kind and by burning of the eyes, which he continually is forced to rub with his hands,

and a peculiar dry feeling on the Schneiderian mucous membrane. Then sneezing commences and continues for several days with little interruption. The catarrh does not only extend to the mucous membrane of the eyes and nose, but also to that of both antra and of the pharynx and neighboring parts, so that pain over the cheek-bone and sore throat are common. At the same time the patient has the same sensation all over his body as a person after having caught a severe cold, and feels remarkably weak. In some cases the whole surface provided by the branches of the sensory root of the fifth nerve is in a state of hyperæsthesia. This form of influenza, which generally attacks stout and robust men, lasts from seven to twelve days. Quinine in decided doses, and syringing the nose, and washing the eyes with a solution of benzoate of sodium (concentrated for the former, mild for the latter), an even temperature, and nourishing but easily digestible food, constitute the most successful treatment. The inhalation of olfactorium anticatarrhoicum (Hager, Comment. ad Pharmacop. Germanic.) accelerates the cure.

2. *The Neuralgic Variety.*—After some chilly sensations the patient has decided fever and excruciating neuralgic pains, which follow one of the three branches of the sensory root of the fifth nerve, mostly the ophthalmic branch. The integument of the whole head is sometimes exceedingly sensitive, a burning sensation is felt on the skin and the head seems to ache all over. At the same time there are symptoms of a moderate catarrh of the mucous membrane of the eyes and of the nose. This painful form, which if left to itself may last two weeks, affects mostly women and thin persons with a predisposition to neuralgia, and can only be controlled by very decided doses of quinine. Those suffering from this form become very feeble, and a vigorous tonic treatment should be adopted, therefore, from the very beginning.

3. *Broncho-pneumonic Variety.*—Here, chilly sensations, mostly creeping along the spine, are never absent, but of short duration and soon followed by high fever and more or less intense headache and restlessness. The temperature is rarely below 104°. The same feeling of exhaustion and debility which is met with in the other varieties appears here also, and is accompanied by more or less difficulty in breathing, by an irritable cough and pain in one side of the chest. After the disease has, for about five days, presented the picture of a common bronchitis, but with the higher temperature, the pain in the head and the remarkable weakness, it assumes a

still graver aspect, and one of the above-mentioned lung complications and sometimes pleurisy makes its appearance. The prognosis depends, as also hinted at above, upon the kind of lung complication and the vitality, strength and age of the patient. It is essential to recognize this form early, so that no depletion, no treatment with tartar emetic, drastics or blisters should be entered upon, but instead of this a tonic regime with ammonia, digitalis and quinine be instituted. Opium and chloral will best relieve the headache, while benzoate of sodium should be inhaled as frequently as possible, by the aid of a steam atomizer.

4. *The Abdominal Variety.*—By chance, I had the opportunity of observing two cases of this kind five or six years ago, when catarrhal fever was also epidemic in our city, and to attend two cases of the same variety this year. The person attacked by it complains of pain in the stomach, nausea and a chilly sensation, succeeded by fever, great thirst, vomiting, constipation and a rapidly developing peritonitis, which runs its usual course, ending, by the beginning of the third week, either in death or in a very slow and tedious convalescence. From the very beginning there exists a remarkable weakness, but the intellect is, even in fatal cases, unimpaired to the last. This variety seems to attack children by preference, and is with them very severe, while adults suffer rarely from it, and then in a milder degree. There are four points of distinction by which this form of peritonitis can be recognized from all the other varieties of peritoneal inflammations: 1. The presence of the epidemic. 2. The absence of any apparent cause, neither the most careful physical examination nor the most searching inquiry into the history of the case throwing any light on the subject. 3. The rapidity of the onset; after the symptoms of a common attack of indigestion have lasted about twelve hours the peritonitis appears, as it were, over night. 4. The great debility of the patient, which accompanies the ailment from the very beginning. In adults the peritonitis is never general, only local in character, and usually confined to the epigastric region. The treatment is the same as that of peritonitis from other causes, with the exception that under no circumstances depleting measures should be adopted. Morphia and quinine, regulation of the diet, feeding by the anus, mercurial inunction into the abdominal walls, benzoate of sodium internally and turpentine enemata have met, in my hands, with the best success.

5. *Latent Variety.*—While influenza is epi-

demic at a place, any patient suffering from any acute or chronic ailment is liable at any time to be brought under the influence of the epidemic. There are two symptoms by which experience has taught us to recognize this influence when brought to bear upon a malady previously existing: a rise of temperature and a general debility; both symptoms appear suddenly and can apparently not be accounted for. The immediate administration of quinine and of benzoate of sodium, and the adoption of a tonic regime in general, are all the therapeutic measures indicated. Whenever this latent gripe attacks persons otherwise already debilitated or old, the prognosis is exceedingly grave. This explains the fact that, while catarrhal fever itself is not a dangerous disease, the mortality rate in a place where gripe is epidemic is greatly increased.

Many other and different pictures have been given of this disease, but a careful examination into the facts of each case that has come under my observation has convinced me that the varieties enumerated are the only ones which can be explained, while all the others belong to the last form (5), where simply the epidemic influence is stamped upon some other complaint.

Let us now look at the etiology of the disease. If we remember the researches of *Klebs*, who followed the bacilli typhosi from the mucous membrane of the nose and the pharynx down the lining membranes of the bronchial tubes to the lung structure itself, and down the whole alimentary tract, and if we think of the Prager epidemic of typhoid fever, during which very few abdominal symptoms were met with and the patients all seemed to suffer from the lung complications only, there cannot be denied the existence of a great analogy between the cause of abdominal typhus and that of catarrhal fever. In the latter we find varieties where the disease seems to be concentrated on the Schneiderian mucous membrane, and the channels and cavities in connection with the nose; then there are cases where we can trace the progress of some irritating substance gradually all along the respiratory tract; and lastly, cases are met with, where the infection evidently has been carried into the system by way of the alimentary canal. I have been able to detect the same infiltration of the mucous membrane, the same perivascular exudation as met with in all infectious diseases, but my microscope was not powerful enough, or my skill in preparing the specimens not sufficient, to enable me to recognize the roots and spores, the existence of which I do not doubt, and I have to leave this research to other hands, more expert

in these examinations. Far be it from me to imagine that the bacillus typhus is the cause of gripe; nay, I mean that researches will soon prove that a micrococcus of some kind produces the manifold symptoms of catarrhal fever.

Another proof of the truth of this assertion is found in the different picture the disease presents in different epidemics. Just as the different cultivation of micrococci, the more or less long continued exposure of each culturing fluid to the influence of the atmosphere produces in the animals inoculated with the different symptoms, though always in harmony with each other, so the longer existence of the poison of catarrhal fever in our air, its condition at the time of entrance into the human system, causes manifold symptoms, which, in the main, however, continue the same. An epidemic of influenza starting suddenly in one part of the country usually loses its severity with its further progress, and while the first cases attacked by it in any locality generally are fatal, or at least severer, the longer the epidemic tarries at one place the milder the symptoms it causes become. Not the least reason for this theory I find in the action of such remedies as quinine, salicylic acid, carbolic acid and the benzoates. I prefer the latter, because while being as effectual, they can be given more frequently, and in larger doses, with greater immunity to the human system than is the case with other disinfectants.

507 Franklin street.

REMOVAL OF A LARGE INTRA-UTERINE FIBROID BY MEANS OF A NEW INSTRUMENT.

BY THAD. S. UP DE GRAFF, M.D.,
Of Elmira, N. Y.

The history of the case I am about to relate does not differ, in any essential particular, from that usually accompanying intra-uterine fibroids. That which I desire to call attention to is the great size of the tumor, the failures at removal by the usual instruments, and final success by means of a specially devised forceps to meet the requirements of the case.

The patient, a married woman, aged 42, sterile, menstruation regular but very profuse. The hemorrhages at the regular menstrual periods had grown, during the past year, increasingly profuse and correspondingly alarming. She had grown so anæmic and weak that the recumbent position, in bed, was an absolute necessity. Finally she came, or was carried, to this city and

placed under the care of a very competent and estimable lady physician, who promptly discovered the cause of the repeated hemorrhages, and recognized the necessity for surgical interference. The patient was too weak, however, to permit of any extended examination, particularly since such a proceeding invariably brought on renewed hemorrhage. After a number of weeks' treatment with tonics of quinia and iron, and subcutaneous injections of ergotine over the region of the uterus, the patient's strength had become so far restored, and the hemorrhages so modified, as to permit of an examination that should ascertain the size and point of attachment of the tumor. By means of a flexible uterine sound, the tumor was found to be attached near the fundus, encroaching somewhat upon the posterior wall of the uterus. It was found to be sessile, with a very broad attachment, and measuring four and one-half inches in diameter. The cervical canal had become obliterated through the pressure exerted by the tumor, while the os was dilated to about three inches in diameter.

This was the condition of affairs at the first consultation, held with a view of determining whether an attempt should be made at removing the growth, and for canvassing the chances for success in such an endeavor. It should have been stated that the patient suffered constant and severe pain, from pressure and weight of the growth, and was clamorous for the removal of it, even if her life was sacrificed in the attempt. It was decided, therefore, to make an effort for her relief. She was given an ounce of brandy, and placed under the influence of chloroform. The cervix was slit with serrated scissors, and the chain écraseur introduced by means of Sim's porte chaîne. The tumor was drawn as far as possible, by means of a strong tenaculum, and every effort made to encircle the tumor with the chain, but without success. The tumor was so large, round, and unyielding, while the attenuated cervix and that portion which should have constituted the cervical canal, embraced the tumor so firmly, that it became simply impossible to introduce between these two structures anything so flexible as a porte-chaîne. Repeated efforts only brought a flood of hemorrhage, and, having tried to reach the base of attachment by means of large, curved scissors and other appliances, without avail, we abandoned the effort to a future trial.

While trying to introduce the chain, it occurred to me—particularly since the tumor felt precisely like a foetal head, at full term—that a

pair of forceps, constructed like obstetrical forceps, but with larger curve and blades so constructed as to form a toothed and grooved articulation at their extremities, might be readily slipped over the tumor, one at a time, and then used as a torsion forceps, and the tumor twisted from its attachment.

Accordingly, drawings were made, sent to Geo. Tiemann & Co., New York, who produced the instrument illustrated in the accompanying cut.

The entire length of the forceps is twelve inches. Length of blades from pivot, five inches. Inside diameter at greatest curvature, two and one half inches. Width of blades, one inch. The remaining details are sufficiently explained in the illustration.

Just ten days after the last attempt at removal of the tumor, we again choloroformed our patient, introduced one blade of the forceps, then the other, without the slightest difficulty or delay, brought their opposing edges as nearly in apposition as possible, and then rotated the smooth blades laterally, within the uterus, until all resistance was overcome, the blades revolving with the greatest ease and smoothness. Then the tumor was delivered precisely as you would a foetal head within the grasp of regular obstetrical forceps. Not the slightest hemorrhage followed this delivery, nor did any untoward symptoms arise thereafter, until complete recovery occurred. The tumor measured six inches in its longest diameter, and five inches in its transverse diameter. It proved to be a hard, elastic fibroid.

For all forms of intra-uterine tumors, attached at or near the fundus, this forceps offers an opportunity for removal with the greatest ease, safety and expedition.



SOME PECULIARITIES OF TUBERCULOSIS EXPLAINED BY THE PARASITIC NATURE OF THIS DISEASE.

BY F. W. VOGEL, M.D.,
Of Boston, Mass.

Since the careful and extensive researches of Robert Koch have beyond doubt established the parasitic nature of tuberculosis, a good many phenomena of this terrible disease, hitherto unexplained, have become easy to understand.

Tuberculosis, according to Koch, depends upon the presence in the body of numbers of rod-like bacteria, which are found in every case of phthisis, acute miliary tuberculosis, cheesy pneumonia, cheesy bronchitis, fungous arthritis, pleuro-pneumonia of cattle, and sometimes in scrofulous affections, especially enlarged lymph nodes. This slender bacillus, pointed at both ends, the length of which varies from one quarter to one half the diameter of a red blood-corpuscle, is about five times as long as thick, and often shows four to five oval spores, evenly distributed over its entire length. This bacillus, which absorbs methylene-blue but rejects brown aniline dyes, thus differing from all other bacteria known, is a true parasite of the animal body, flourishing only at temperatures furnished by his living abode, and becomes totally inactive at the ordinary temperatures of our climate. Fortunately for mankind it multiplies very slowly, requiring nearly a week to proliferate much under the most favorable conditions, so that it has no footing upon wounds of the outer surface, like other quickly developing organisms, but is washed away by the secretions before it has had a chance to multiply. Even in the sheltered air passages, where it generally makes its first appearance, unless finding its soil prepared by previous inflammatory processes, loss of epithelium, etc., it seems entirely innocuous, being readily removed with the secretions before it has time to take root. When it once has a firm footing, its local extension is still slow, because the bacillus has no movement of its own, and, in order to reach the other parts, it must be carried thither by the lymphoid cells. If, however, the bacilli reach the lymph channels, they are carried greater distances, successively infecting the whole track of a lymph vessel, until stored up in the filter of the nearest lymph node. The matter becomes very serious when numbers of them reach the blood current in the veins, when they become disseminated through numerous internal organs, and acute miliary tuberculosis will be the result.

The anatomy of a tubercle is easily explained

now also; a bacillus settles in a tissue, irritates and causes a small-cell infiltration around it; those of these cells nearest the parasite grow up to fibroblasts (epithelioid cells), which, closely pressing upon each other, coalesce and form the giant cell, so often found in the centre of miliary tubercles, harboring one or several bacilli. This giant cell is again surrounded by embryonic cells, some of which are growing up into epithelioid cells. Since no blood vessels form, the centre of the tubercle undergoes fatty degeneration as soon as the growth spreading in the periphery has become numerous enough to take up all the nutriment supplied by the nearest vessels. A number of bacilli appear to die with the cells, which gradually shrink up into a cheesy mass, but others are taken up with particles of detritus by lymphoid cells and are transported into the immediate vicinity, where they begin slowly to proliferate again, giving rise to a fresh tubercle, when the process is repeated over again, adding to the central destruction as well as to the peripheral proliferation. As may be inferred from this, the bacilli are found in greatest numbers where the process is in the act of spreading; where the latter is stationary they are difficult to find.

How do the bacilli enter the system? Koch found that sputa of phthisical patients always contained bacilli; in fact, that the gramous masses so generally present in all vomices entirely consisted of agglomerations of these parasites. The drying of a sputum does not rob the bacillus of its life; sputa dried for eight weeks, and injected into guinea pigs, produced acute miliary tuberculosis in every instance. The dry sputum upon the floor is ground into dust; the bacilli, adhering to some particle of the latter, enter the lungs with the air we breathe and are arrested upon some prominent spot of the mucous membrane which lies opposite the air-current, especially the ridges of the alveolar septa.

But there are other channels by which the bacillus of tuberculosis can enter our system. Pleuro pneumonia of cattle being identical with tuberculosis, the bacillus may be introduced into our alimentary canal with the meat or milk of cattle suffering from this disease.

There is one point which might be urged against the conclusiveness of Koch's observations. We mean the hereditary acquisition of consumption. Still this can be explained very easily. Judging from analogy with syphilis, the twin brother of tuberculosis, direct transmission of the disease germ is possible; also that the disease may remain latent, unless the germs are so numerous as to overwhelm the resistance of the

vigorous functions of the young cells of childhood. Furthermore, numbers of them are easily stored away in some lymph-node, where they are kept from doing general mischief for a time. Again, we must keep in mind, that in cases where direct transmission of the disease-germ has not taken place, the direct contagiousness and infectiousness of the bacillus comes into free play, the children being obliged constantly to inhale the infected air of their home, or ingest the parasite with the mother's milk.

The practical results obtained from Koch's valuable paper may be summed up as follows:—

All sputa from phthisical patients are to be disinfected immediately; also the clothing, bedding, etc., before used by other people.

Phthisical mothers must not nurse their infants.

Scrofulous, infiltrated glands ought to be excised.

Meat and milk from cattle which have suffered from pleuro-pneumonia must not be allowed to enter our system.

Antiseptic treatment, perseveringly and vigorously carried out, is the only rational treatment for consumption. Carbolic acid inhalations through the nasal respirator, local treatment of tubercular ulcers, fungous arthritis, etc., with iodoform, have already given great results, the latter remedy being preferable in places where the drug can remain undisturbed for a longer time.

HOSPITAL REPORTS.

COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

CLINICAL LECTURE BY FESSENDEN N. OTIS, M.D.,

Professor of Genito-Urinary Diseases.

Epididymitis.

GENTLEMEN:—At our former clinic we were considering the last stage of gonorrhœa. I have been hoping for cases to appear as we progress that shall illustrate some of the complications of this disease. You remember the point at which gonorrhœa commences, viz., at the orifice of the urethra, extending, by implication of the healthy mucous membrane, along the urethral canal, developing in intensity as it extends. The pain and discharge are simply associated with an inflammatory condition, which gradually declines in intensity as the disease reaches the deeper portions of the urethra.

As the disease progresses important parts may be involved in the inflammation, and when they are so, we distinguish these accidents as complications of gonorrhœa proper. One of the most important complications is the occurrence of epididymitis, which is an inflammation of the

seminal apparatus. You will recollect that the mucous membrane of the urethra commences at the orifice of the urethra, and extends through to the bladder. Now, the inflammation beginning at the meatus, travels along the continuous surface of mucous membrane, and when it reaches the posterior portion it comes in contact with the orifices of the seminal ducts through which the vas deferens opens into the urethral canal.

The vas deferens is the vessel which conveys the seminal fluid from the testes to the urethra, and also along which inflammation travels from the urethra to the testes. It pursues a devious and peculiar course, which it is desirable for you to appreciate, and as we are now more particularly interested in the manner in which inflammation in the urethra finds its way to the testicle, I will take the urethra at its prostatic portion at the openings of the seminal ducts as the starting point.

These ducts opening one on each side of the sinus pularis, pass backward to the inferior surface of the bladder, along the inner wall of the prostate, at about the junction of the posterior border of that gland, at which point the duct unites with the vesicula seminalis or seminal reservoir, and passing the vesicula to the outer side it passes over the base of the bladder, between it and the rectum, and is deflected outward, and crossing the external iliac vessels reaches the abdominal wall at the external abdominal ring; passing then down through the inguinal canal, it enters the scrotum, descending to join the tail of the epididymis, with the convolutions of which it is continuous until it reaches the secreting lobules in the substance of the testicle.

Now I think you can readily understand how a gonorrhœa, commencing in the urethra and gradually extending back, comes in contact with the seminal duct, which is lined by mucous membrane exactly similar to that of the urethra. There is no reason why this inflammation should not follow along a continuous surface. This accident does occur not infrequently. Occasionally it extends along the canal until it reaches the testicle itself. The inflammation is generally said to be in the testicle, but as it is usually confined to the epididymis and does not reach the seminal lobules, we call it epididymitis.

We have here to-day a case illustrative of this point. John F., of Portugal, aged 38. First time he has had any venereal trouble. Three weeks ago had intercourse, and noticed a discharge from the urethra for the first time about seven or eight days afterward. Had no intercourse in the meantime. Went to an Indian herb doctor, who gave him a prescription to be taken internally, and four days afterward the discharge disappeared. The epididymis of the right testicle began to swell and be painful about four days ago, that is, six days after the discharge disappeared, and still continues so. Present condition: Epididymis much swollen and indurated; cord hard and resistant to touch. Has dragging pains in the testicle.

One of the peculiarities of this difficulty is that it occurs in the later stages of gonorrhœa, when the disease in the urethra is subsiding. One of the peculiarities of all inflammation is that counter-irritation has a tendency to reduce it. In

this case the epididymitis was noticed and felt several days after the discharge had stopped. Usually the discharge ceases a little time before the epididymitis begins. It is probable that the inflammation in the testicle acts as a counter irritant to that in the urethra, and that the inflammatory discharge from the urethral canal is thus arrested.

In the present instance the inflammation has extended by continuity along the vas deferens. Here you see the testicle on the left side, which is perfectly natural; there is no tenderness, nor any engorgement. On the affected side you observe a slight redness. Swelling and redness of the integument is associated, as a rule, with all cases of epididymitis. Here we have the testicle, and lower than and anterior to it a considerable enlargement of the epididymis, which extends up the testicle. The testicle itself is not at all inflamed, and this is the condition in an early stage. You do not always find that an inflamed epididymis can be distinctly separated from the testicle, but you see a common globular swelling apparently including both the testicle and epididymis. When the inflammation reaches the deepest part it is usually transmitted through the cellular tissue in greater or less degree to the tunica vaginalis or the serous sac which contains the testicle.

The testis in foetal life is situated in the abdomen, and covered anteriorly by peritoneum. Toward the end of foetal life it descends, and in doing so carries down with it another layer of peritoneum situated in front of the inguinal canal. Thus it takes down into the scrotum a double layer, a membrane doubled on itself so as to form a closed sac. Between these two layers of serous membrane there is naturally a certain limited amount of serous fluid which serves as a lubricating material, which favors the easy movement of the testicle in the scrotum. In a healthy condition there is but a small quantity of this fluid present in the sac, probably a half drachm or so, but on the occurrence of inflammation the amount is greatly increased. The inflammation has extended from the mouths of the seminal ducts to the vas deferens, and from it to the epididymis. When it is intense it is propagated through the cellular tissue into this closed cavity, and an increased quantity of the fluid contained therein is a necessary result. We then have a swelling which obscures the boundaries of the epididymis and the testicle.

In this case we can, without difficulty, feel the line of demarkation between the epididymis and the testicle which would not be the condition had the inflammation been communicated to the serous sac. In that case the swelling would have been larger and fluctuation could be felt distinctly. In some of these cases the scrotal tumor reaches the size of a goose egg.

The symptoms which precede an epididymitis are important. You may always take it for granted that when a gonorrhoea has extended to the posterior portions of the canal there is great danger of its extending into the vas deferens. When the trouble first came on, this man had pain in walking, a little pain in his back, groin, and in the testicle. The ordinary course of the symptoms in cases of this kind is exactly what

you would suppose when you know the manner in which the vas deferens passes from urethra to testicle. Pains regularly follow in the urethra, in the perineum, in the back, in the abdomen, in the groin, and in the scrotum. This is the natural course of the symptoms in cases of epididymitis or orchitis. Sometimes you are even enabled to trace the vas deferens by the location of the pains during the passage of the inflammation along its course.

Gonorrhoea is not the only cause of epididymitis, but any source of urethral irritation may set it up. The introduction of a large-size sound may cause the difficulty, and I have frequently found that after the passage of an instrument pain has traversed the whole extent of the passage from the urethra to the testicle. Where I have detected threatenings of an epididymitis following the introduction of a sound, I have been able to fence off the difficulty by suppositories of a quarter of a grain of morphia, introduced at once into the rectum, supporting the testicle in a suspensory bandage, and putting the patient on his back for a day or two.

In cases of this disease always support the testicles. After a gonorrhoea has continued for ten or twelve days it is safest and most prudent to support the testicles with a U. S. Army bandage. With this precaution you are likely to prevent the occurrence of an epididymitis, and will certainly lessen very greatly the danger of its occurrence.

The present condition of this patient is one which calls for simple treatment. With proper care he may be entirely relieved in a short time. He must keep perfectly quiet, and wear a suspensory bandage. I also think a good deal of narcotic fomentations during the acute or painful stage of epididymitis. By their use I think the disease may often be arrested, and always made to run a milder course.

In this case, as I said, I would prescribe absolute rest, and if he suffers any pain a suppository of a quarter of a grain of morphia. For local application let him take equal quantities of cut tobacco and flaxseed and steep them together in a little water; then take an old stocking—this is about as good a method of doing it as any—cut off the heel generously, and sew a piece of tape to each side of it, in order to fasten it up; put the hot fomentation in this, and with it cover the testicles and fasten the tapes around the waist. This fomentation should be renewed several times in the twenty-four hours. The hotter you can keep it the better.

It is always well to clear out the primæ viæ in cases where you find any general febrile reaction, and likewise give a little aconite, and in this way you mitigate the general symptoms. Then, in very acute cases, I have found a nauseant of value. In cases in which the pain and inflammation are very intense, you must put your patient on his back, in bed, and wrapping a towel around the thighs, put the scrotum on it, letting it thus have a support, which affords some relief. Then give a solution of tartar emetic, with epsom salts, until the patient is slightly nauseated.

When at sea I have seen a number of cases in which there was an acute epididymitis, and sim-

ple sea-sickness relieved the inflammatory symptoms very quickly and permanently.

After the immediate active inflammation has ceased, we must have something to stimulate the absorption of the inflammatory products, the serous fluid and plastic material, which form the swelling and enlargement. Iodine is an excellent absorbing agent, and the best form for the purpose here is the ointment of the iodide of lead. After the narcotic fomentations this ointment is very serviceable in reducing the size of the tumor.

When, however, you see a patient suffering intensely with an acute epididymitis, and also observe fluctuation, you have no time to wait for the effect of external remedies. In such a case it is best to pierce the sac of the tunica vaginalis with a hypodermic syringe, and draw off all the fluid contained. No harm can come from this simple operation, and under such circumstances it is always best to do it. First make the integument tense by stretching it with the fingers, and then penetrate quickly with the point of the instrument. When you find fluid in the sac of the tunica vaginalis, which causes pain by making the parts tense and stretching inflamed surfaces, it is always best to remove the fluid and give immediate relief to the patient.

The subsequent results of an epididymitis are of the utmost importance. You know what is the result of inflammation in any part of the body. Plastic material is invariably thrown out, which may organize anywhere, and you see, therefore, how, during such an inflammation as we have been considering, an obstruction may take place in this canal of the vas deferens, at any point over which the inflammation has passed, through the accumulation and organization of the plastic material. If such an obstruction does occur it becomes a barrier to the passage of the spermatozoa to the urethra. If any occlusion exist at any point in the course of the epididymis or vas deferens, the man will be impotent on the side in which it is situated. If the epididymitis is double the occlusion may occur on both sides, and, of course, with such a state of things, complete impotence results, and may possibly become permanent. This, undoubtedly, is a cause of many cases of sterility, following marriage, where the woman is, often unjustly, blamed. A man may have an emission containing all the characteristics of the seminal fluid, but which, nevertheless, is deficient in spermatozoa. There are plenty of men who imagine that there is nothing the matter with them, but that the cause of sterility lies with the wife, when if their emissions should be subjected to an examination, the vivifying principle would be found to be absent.

In these cases you will generally find a lump behind each testicle, a little induration at the point of the epididymis. The proper treatment consists in the use of those remedies that promote the absorption of cicatricial tissue. Give mercurials or iodide of potassium: a quarter of a grain dose of iodide of mercury for three or four weeks will often do great good. Gosselin relates a number of cases where impotence which had existed for many years was cured by this mode of treatment.

Urethral Stricture.

This case is the one we saw last Thursday. The patient was examined and found to have a stricture at the meatus and several bands of stricture further down. His symptoms, which were chiefly neuralgic pains in the thighs, perineum and above the pubis, induced me to believe that his trouble was due to reflex action, experience in many cases having convinced me that this is a common cause of such troubles. Last week I divided the stricture at the meatus, and told you that I was of opinion that all his difficulty was due to that constriction, as it is here rather than at a deeper point, that stricture is likely to occasion reflex difficulties. Since its removal he tells us that the pains that he complained of have left him.

To-day I propose to divide the deeper strictures. Bulbous sound No. 26, as you see, demonstrates stricture in the spongy portion of the canal. Before I have passed the instrument half an inch the stricture is found. This is evidently a very dense one. The bulbous sound passed the constriction with a jerk which any one could recognize, as it escaped the firm grasp of the stricture into the normal urethra beyond.

I now propose to use the dilating urethrotome. This is an instrument which first dilates the stricture and then cuts it. I turn up this screw until the blades of the instrument are separated to correspond with the normal urethral calibre, and then draw a knife through the stricture, which then cuts it completely and entirely through. The important point in the operation is to adapt the knife to the stricture properly dilated, and then made tense and thin; and when that is done judiciously there can but rarely be failure to divide it completely.

The sound, now, as you see, passes easily. I think, however, there is a slight band which still remains, not being completely severed, and as I never feel satisfied until every fibre of stricture is severed, I will again introduce the urethrotome and complete the operation. Now, on testing with the full-eyed bulbous sound, there is seen to be not the slightest obstruction at any point. This is one of the densest strictures that I have ever cut with this instrument. It is now, however, thoroughly divided, and if, as we intend, it is kept from healing by first intention, the cure will in all probability be permanent. I am aware that this doctrine of the radical cure of strictures is not generally accepted, but I hope to convince you of its truth and value before the termination of the session.

Charles Darwin Memorial.

The executive committee of the Darwin Memorial Fund recently held a meeting at the Royal Society's Rooms, Burlington House, where the subscriptions received or promised amounted to over \$12,000. A decision was arrived at that a marble statue of the late naturalist should be executed, and a sub-committee was appointed to arrange for this being done. The site chosen for the statue is the large hall of the Natural History Museum, at South Kensington, for permission to place it in which the trustees of the British Museum will be petitioned.

EDITORIAL DEPARTMENT.

PERISCOPE.

Transfixion of Neck by a Walking-Stick.

In the *Lancet*, Mr. Davies-Colley reports the following curious and interesting case:—

Henry C., aged eighteen, was admitted on March 20th, 1881. Shortly before, he was walking along the side of the curb, carrying in his hand a stick, about as thick as his index-finger, and holding it by the middle, when he slipped and fell upon it. The blunt point entered his neck upon the right side, went through, and projected for about two inches upon the opposite side. With his neck thus transfixed he walked about 250 yards, to a doctor, who pulled the stick out for him, and sent him on to the hospital, after he had plugged up the left opening, from which there was a little bleeding.

On admission, he was a healthy-looking, well-nourished boy, and he had not the appearance of having met with any serious injury. He had not spat any blood, nor vomited, nor had there been any difficulty in breathing. On the right side of the neck there was a wound half an inch long, directed downward and forward, two inches below the tip of the mastoid process, and one inch in front of it. The adjacent skin was slightly abraded. On the left side there was a transverse wound, also half an inch long, directly below, and an inch from, the tip of the mastoid process. A few drops of blood had escaped from the left wound, that of exit, but barely a trace from that upon the right side. He could raise his head from the pillow with little or no pain. There was some pain on swallowing, about the pomum Adami. His voice was not at all affected. The stick was of blackthorn or holly, stripped of the bark, polished and black, with rounded knots upon it. The lower extremity was three-eighths of an inch in diameter, without a ferrule, smooth, and cut transversely, with a somewhat rounded edge. The rest was from half to five-eighths of an inch thick. His wounds were washed with carbolic lotion, and lint soaked in a mixture of oil and carbolic acid applied. He was kept in bed, and had low diet for four days, after which he was allowed to take first fish and then meat. No rise of temperature followed the injury.

March 23d: Still a little pain in swallowing. 24th: Wound on left side healed. 27th: Allowed to get up. 28th: No pain in swallowing. Feels slight pain when the head is forcibly extended. 29th: Right wound healed; there has been no suppuration, only a scanty discharge of bloody serum.

April 6th: Went out, quite well.

Remarks by Mr. Davies-Colley.—From the position of the wounds, and from the subsequent symptoms, it was thought that the stick, after entering the neck in front of the right sterno-mastoid muscle, passed between the vertebral column and the pharynx. In this course it must have been close to the great vessels on the right

side of the neck, perhaps between them, near the bifurcation of the common carotid artery. On the other side it probably passed behind the great vessels, and then emerged through the fibres of the sterno-mastoid muscle. The direct line between the wounds would have been through the pharynx, but as there was no spitting nor vomiting of blood, and as the pain in swallowing was slight, it is very unlikely that this cavity was penetrated. In all probability the stick glanced against the vertebrae, and so had its direction altered. It must then have traversed the space behind the pharynx, which, in order to allow of the free movements of swallowing, is very loosely connected with the bodies of the vertebrae. The case is also of interest, as it illustrates the ease with which the vessels slip aside and avoid injury from the penetration of a blunt-pointed instrument.

Significance of Albuminuria.

At a meeting of the Cambridge Medical Society (*Lancet*) Mr. Carter introduced the subject of the Significance of Albuminuria, when not dependent on Bright's disease. He remarked on the frequent difficulty of satisfactorily ascertaining the precise meaning of albuminuria when unattended by kidney disease. Various albuminoid substances were known to occur in the urine, and besides the several forms of albumen, and the globulins, there also sometimes occurred the several ferments, ptyalin, pepsin, and trypsin. The results of various observers went to prove that out of a given number of cases of albuminuria, only about half would be of renal origin, and the remainder would be found to arise from other conditions. In one class of cases it was to be referred to the nervous system—neurotic albuminuria—and like diabetes it was not infrequently found to follow prolonged mental anxiety. The form in which it occurred in young men, the so-called albuminuria of adolescents, had been regarded as neurotic, but Mr. Carter thought it more probable that it was connected with the sexual function; were it of nervous origin it would occur in young women and girls, which it was seldom known to do. It would seem to depend upon some condition peculiar to males. Albuminuria frequently signified mal-assimilation of the albuminoid elements of the food. If the amyloids of the food failed to be normally assimilated, he suggested that a set of conditions occurred of which diabetes was the type; if the assimilation of the albuminoids were faulty, that other conditions arose which were indicated by albuminuria. The late Dr. Parkes had called attention to the condition here referred to, which he called "food albuminuria." In yet another class of cases, albuminuria signified some interference with the circulation of the blood, or some abnormal condition of the blood itself. In those affections of the liver in which it was a symptom, it might depend either on abnormal circulation, in which case serum albumen would appear, or on defective meta-

morphosis of the albuminoids, when it would almost certainly be due to the presence of some other albuminoid. In morbid pulmonary conditions, also, it might indicate either interrupted circulation or defective pulmonary excretion. When it occurred in pregnancy, it appeared that impediment to the venous circulation was commonly the main factor, but there was also an altered quality of the blood itself.

Dr. Bradbury remarked that the subject was one in which he had taken a special interest. With regard to the albuminuria of adolescents, he had in his practice been consulted by many undergraduates affected by it, and had, therefore, unusual opportunities for investigating its cause. In a large proportion of such cases the albumen was only to be found after breakfast, and he had come to the conclusion that it was due to seminal fluid finding its way into the urine in connection with the act of defecation. There could be no doubt as to the existence of many varieties of albuminuria, but it was difficult to determine the different forms. Often it was an accompaniment of indigestion, and sometimes occurred only after the ingestion of certain articles of food, as in one case which had come under his own care, in which it occurred only after the patient had partaken of boiled beef. He had seen cases, also, depending on hepatic derangement due to alcohol or other excess, and had noted the disappearance of the albumen when the hepatic enlargement subsided. Albuminuria with high arterial tension meant, as a rule, commencing Bright's disease; when accompanied by low tension, the probabilities were in favor of there being no renal disease.

Tetanus Neonatorum.

Mr. Sidney Davies reports the following case in the *Medical Times and Gazette*:—

Albert D., aged seven days, was admitted into the Training Hospital about 4 P.M., on April 3. The nurse who brought him stated that he had been quite well, and sucked the breast naturally, till the day before, when his jaws had become firmly closed, so that nothing could be passed between them, and he had a general convulsion, with flexed arms, clenched hands, and difficult breathing. He cried loudly at this time. The mother stated that the first thing she noticed was an attack of wind in the stomach, with spasms of the abdominal muscles.

Both parents were healthy, and had had four other children, all living. Their home was a fair sized cottage, of average cleanliness; the room in which the mother was confined was small. The mother's bed lay immediately under the window, but the nurse stated that she was exposed to no draught during the time of her delivery.

The child was in a state of general muscular spasm, and was crying fairly lustily. It was a very large, well-nourished male child, and had a partial hare-lip. The mouth was partly open, the lower jaw fixed, the brows contracted, eyes screwed up, and whole face drawn. The arms were firmly flexed, and the hands clenched, one thumb being inflexed, the other excluded from the grasp. The legs and toes were also par-

tially flexed. The head was slightly retracted. The breathing was quick and shallow.

A warm bath was ordered, and after being in it about seven minutes the muscles became much relaxed.

About 7.30 P.M. on the same evening the child was seized with another attack of severer spasms. It now cried very feebly, and immersion in a warm bath produced no beneficial effect. The baths were accordingly discontinued. The severe spasm subsided shortly, but a continual state of muscular contraction remained, and exacerbations came on when the child was disturbed, as by feeding. The exacerbations soon occurred without any visible stimulus, and returned, for the greater part of the time it survived, about every half-hour; they lasted from five to twenty minutes. Ordered a grain each of potassium bromide and chloral hydrate in a drachm of water every two hours.

During the night the child lay quiet, apparently asleep, except when the exacerbations came on. Audible cries had ceased, nor did they return.

When seen again in the morning, it lay with both eyes tightly closed, face and mouth drawn equally on both sides, mouth puckered, left pupil larger than right, hands as before. Opening the eye brought on a spasm. Temperature at 10.30 A.M., 103° Fahr. Ordered the chloral to be increased to four grains, and the bromide to two grains, and given every three hours.

In the evening the spasms became more frequent and severe, and during them the child became rather cyanosed. When seen at 11 P.M., the limbs were quite lax, and examination brought on no spasm; but the face was cyanosed. A severe spasm was reported to have occurred at 10 P.M.

The medicine was now discontinued. Three spasms occurred after this, and the child died in a spasm at 1 A.M. Temperature at 9 A.M., 105.7° Fahr.

The child had been fed all along by a spoon, with the mother's milk, drawn off for the purpose. This feeding was performed with some difficulty, but on the whole the child took a fair quantity of nourishment.

Remarks (by Mr. Sidney Davies).—The diagnosis in this case was first made by the friends, for the nurse said, when she brought the child, that it had "lockjaw." Having seen the two cases of tetanus neonatorum which occurred at the East London Children's Hospital last winter, and were reported in the *Medical Times and Gazette*, I immediately thought of that disease; but when the spasms subsided almost completely in a warm bath, I gave up the idea that it was a case of tetanus, and thought it was a simple convulsion. The diagnosis, however, was made sure within a few hours by the following points: The continuous muscular spasm which supervened on the second attack of severe spasms; the fact that a warm bath with mustard did not relieve the spasms; and the absence of sonorous cry. The latter point, though not characteristic of tetanus in adults, was observed in both the above-quoted cases which occurred at Shadwell. The exacerbations were of unusually long duration in this case, lasting from five to twenty min

utes (according to the nurse's statement). The treatment adopted was that which appeared to be partially successful in one of the two aforementioned cases, *i. e.*, large doses of chloral. Certainly a beneficial effect appeared to be produced, and the death of the child—probably from spasm of the glottis—so soon after I last saw it was quite unexpected.

The Scientific Principles of Inhalation.

In the *British Medical Journal*, Dr. Robert J. Lee thus writes:—

The important relation recently shown to exist between septic agents diffused in the atmosphere and certain forms of pulmonary disease, is receiving so much attention that it is well to consider the scientific principles on which it depends. Experiments show that it is possible to diffuse antiseptic agents in the atmosphere by evaporation, and that organic substances may be preserved in such atmosphere without decomposition; or, in other words, that the air may be treated as a fluid, and be charged with antiseptics which prevent bacterial development. Now, when we burn any of the hydrocarbons or gum-resins, we do not volatilize them, and the air is not rendered antiseptic, except to the extent that a certain amount escapes unburnt and is diffused. It follows, from this, that destruction of the antiseptic agent must be avoided. After numerous experiments—and the general results of those made a few years ago were presented at the Cambridge meeting of our Association—it appears that carbolic acid is the only antiseptic, as far as I know, which can be volatilized in a definite and constant manner. This is a most important fact in treatment, and deserving attention. If a solution of 1 part of carbolic acid in 80 of water be distilled under slight pressure, the vapor will contain the same proportion of the acid as the solution during the process of boiling; so that we can obtain vapor of any strength, and diffuse it in the atmosphere. Other antiseptics are either more or less volatile; as, for example, thymol, which comes off very rapidly from the boiling water, as does also benzoic acid; so that they are not convenient for inhaling.

It is also necessary to observe that vaporizing a solution in the form of spray does not volatilize the antiseptic to any great extent, since the dew settles quickly on the nearest surfaces, and does not rise and diffuse itself as the vapor of steam does.

Again, the sprinkling of solutions on clothes does not necessarily secure diffusion of the agent; for, at the ordinary temperature, the agent may not evaporate, but will remain in the texture of the cloth. There are other details which will occur to those who reflect on these matters, and will secure such success as may fairly be expected from the scientific use of atmospheric disinfectants. I trust that I shall be forgiven for egotism in saying that I think the small inhaler exhibited by Maw, Son & Thompson for me, at the International Sanitary Exhibition at the present time, affords the most convenient and scientific means of atmospheric disinfection; and that, until more perfect methods are offered to the

profession, I believe it will be found deserving of more general attention than it has yet received.

Intussusception, with Recovery.

In the *Boston Medical and Surgical Journal*, Dr. S. W. Langmaid reports the following interesting case: March 10th he was called to a female child of five months who was the subject of the above accident. The infant had always been well, and had not been particularly constipated.

He saw her on Friday. She had been well until Tuesday night, when she was restless, desiring to nurse often, but rejecting the nipple immediately. The next day she vomited, and cried out at intervals, as if from severe pain. At noon she began to have bloody discharges. The pain and bloody discharges continued until he saw her on Friday. She appeared stupid. The pulse was 120. The abdomen was not distended or tender to pressure. The finger, inserted its whole length in the rectum, encountered a tumor with a central indentation, reminding one, by its shape, of the neck of the uterus.

Dr. Sumner saw her with him two hours later. A cylindrical tumor existed in the region of the descending colon. The invaginated intestine had come down to the anus, and, holding the child in the inverted position, was seen to be of a chocolate color. The duration of the lesion, forty-eight to sixty hours, and the appearance of the bowel, decided us against any mechanical interference. The condition of the child remained the same, except that the discharges of blood became less frequent and smaller, until Sunday night, when the patient became brighter, nursed, and retained the food. On Monday there were two natural dejections, the tumor had disappeared, and the child was well.

Commenting on this case Dr. Whitney says that in the palliative treatment of intussusception a spontaneous cure is observed in fifty per cent. of the cases. It seems to him that the prognosis must depend very much upon the situation of the intussusception. If it occurs in the small intestines, and especially if the ileo-caecal valve is invaginated, the chances of spontaneous cure would be less than when the descending colon is the region involved.

Paracentesis Cranii in Hydrocephalus.

In the *Lancet*, Dr. Hugh P. Dunn recommends paracentesis in cases of hydrocephalus, believing that when the operation is properly performed it is not dangerous, but on the contrary, is productive of much good. A small aspirator, of about half an ounce capacity, furnished with a double cock arrangement, is the instrument he uses. The child being held on the nurse's lap, with its head facing the light, the operator marks a point in the situation of the coronal suture about an inch from the longitudinal sinus, and, holding the needle firmly in his right hand, thrusts it into the cranium with its point slightly inclined inward. It is a good plan to first thoroughly cleanse the needle in a solution of carbolic acid. The needle having entered the cranium, the sur-

geon grasps it close to the scalp by the forefinger and thumb of the left hand and steadies the head with the right, and the assistant manipulates the piston of the aspirator. The piston should be slowly withdrawn, and pauses of a few seconds now and again allowed to elapse, in a manner similar to the application of the *écraseur*. The position of the needle may be altered from time to time, according as the tension on the piston shows that the fluid has diminished. After about half an ounce of fluid has been abstracted, compression of the cranium should be secured. The best way to secure this is to use a piece of india rubber tubing, corresponding in diameter to a quarter-inch gas pipe. The tube, around which some lint may be wrapped or sewed, should be made to encircle the cranium twice, at a level with the occipital protuberance behind and the centre of the forehead in front. As the fluid is gradually withdrawn, the tube is, from time to time, readjusted and tightened. When the operation is completed, the punctured spot is covered with a piece of dry lint and attention directed to compression of the cranium, which can be accomplished by fixing the tube *in situ*, or a capeline bandage of flannel carefully applied.

To sum up, paracentesis cranii is indicated in all cases of acute and chronic hydrocephalus, in which, medicinal treatment having failed, the patient is clearly suffering from increase of the fluid and life is threatened. It is the only means by which life can be prolonged, even if, by its performance, the disease is not arrested. All the fluid which can be obtained should be withdrawn. The operation may have to be repeated, should a re-collection of the fluid be followed by a return of the symptoms which made its previous performance necessary. The risks attending the operation are almost *nil*, if carefully performed.

A Peculiar Skin Eruption During Pregnancy.

Dr. R. J. W. Oswald reports the following interesting case in the *Lancet*:—

Mrs. A., aged forty, the mother of five children, was confined of a healthy male child on March 7th, 1882. She had had no child or miscarriage for eight years and three months previously. When about five months pregnant with this last child, she noticed a squamous eruption appear on the upper third of the forearms, not affecting the flexures of the elbow joints. This eruption gradually became worse, the skin was indurated and raised, and eventually both forearms and hands were affected. Almost concurrently with this the lower limbs showed the same peculiarities, with some variations, however. The enlargement was very great, almost to twice the natural size, accompanied with oedema. The skin was very rough and hard, and appeared similar to "elephantiasis." About two months before the patient was confined, larger bullæ appeared on the lower extremities, but at no time were the upper limbs thus affected. Some of these bullæ burst and formed hard, thickened crusts, from which exuded a thin, glairy fluid. The pain accompanying this affection was very severe, and the patient was unable to go about her household duties for fully three months previous to her confinement. Immediately after

the confinement the skin of the forehead, face, neck, and upper part of the chest, which up to that time had been free from blemish, began to be squamous and indurated, and very much thickened, but no bullæ appeared at any time. Both anaesthesia and hyperaesthesia were present. She is now (seven weeks after her confinement) better in some respects, although there are still a few bullæ on the legs, and the skin still shows to a slighter extent the peculiarities just described. The patient is no doubt of a rheumatic diathesis, but whether this, combined with the great changes the system undergoes during pregnancy, has helped to cause this eruption, I cannot say. The only treatment adopted has been absolute rest and the administration of alkalies. Previous to her confinement eight years ago the patient had a similar eruption on the forearms and hands, and the legs and feet were affected also about two months before the confinement. In about three weeks after this the skin was clear again, and the severity of the attack was not nearly to the extent as in the present instance.

REVIEWS AND BOOK NOTICES.

BOOK NOTICES.

A Treatise on the Physiological and Therapeutic Action of the Sulphate of Quinine. By Otis Frederick Manson, M.D., etc. Philadelphia: J. B. Lippincott & Co. 1882. Small 8vo. pp. 164. Price \$1.00.

A book without either preface, table of contents or index, impresses a reader at first sight unfavorably, as indicative of negligent preparation, or deficient literary skill. This is the case with the work before us, and the impression is not removed by examining the text. It is largely made up of quotations, many of them second-hand, and presents very little original matter. Histories of a few cases are all that the author contributes from his own knowledge. As a compilation from current writings, it will, however, be found to contain many useful facts.

Hints and Remedies for the Treatment of Common Accidents and Diseases. By Dawson W. Turner, D.C.L. 8vo. pp. 106. Cloth. Price 50c.

In the compass of a hundred quite small octavo pages the compiler of this volume gives a vast deal of useful information about matters of every day comfort and hygiene. No one can spend half a dollar better than in buying it. He is too sanguine of success in some of his recommendations, but that is a trifling fault.

What To Do in Cases of Poisoning. By William Murrell, M.D. Second Edition. George S. Davis, Detroit. 1882. 32mo. pp. 96.

This is a "vest pocket" book, and as it is prepared by a competent hand, it may be relied upon as accurate and giving the most recent antidotes.

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THE MORTALITY IN HEATED TERMS.

The heavy mortality which always attends a "heated term" in our large cities is apt to be attributed, by hasty observers, to the heat directly. But, in fact, a temperature which at its maximum is not equal to that of the normal human body is not unfriendly to health. On the contrary, it is favorable. An eminent English authority on vital statistics has summed up their relation to mortality in the terse sentence, "Waves of heat are waves of life; waves of cold are waves of death."

The same result is seen in comparing the relative populations of countries. The density increases from the absolutely uninhabited poles to the tropics teeming with life in every form.

We must look somewhere else, then, than to the heat alone, to explain why the mortality in New York city, for instance, is, in July, at the rate of an annual average of fifty or sixty per thousand, while in the cooler months it is twenty-five or thirty.

This difference is an artificial one, of man's creating, and is preventable.

We must, indeed, allow that sudden changes, from cold to great heat, act unfavorably, and part of the mortality is fairly attributable to this. Only a small part, however. The great bulk of deaths are unquestionably caused by injurious food and habits of life.

The mortality is greatest among children, whose food is of a character most apt to be spoiled by heat. Pure, sweet milk, scarce at all times, is next to unobtainable in the July heats, in great cities. Fruit of all kinds is abundant, but generally immature or partly decayed. Meat, which is not a diet for hot weather, becomes most easily tainted, and the animals from which it is taken are, at this season, often over-heated or unhealthy. Stimulants of every kind act most hurtfully in great heats, and yet their consumption is actually increased then, the thirst brought on by the actual transudation prompting thereto.

The houses and clothing customary and suitable to moderate weather are both ill adapted to a temperature above 80°. The clothing may easily be thrown aside, but not so the houses. The heated walls maintain the temperature during the night, and sleepless hours wear heavily on the overtaxed, nervous system.

These hints indicate why a "hot spell" is a destructive one in our latitude. Reflection will show that it is so because we will not observe the mode of life, at that period, which the experience of warm countries proves is the suitable one. Even under the unfavorable surroundings of an alley in a city, it is quite possible to be cleanly, temperate, careful about food, and observant of the rules of hygiene. Were this generally so, we should have no such long lists of deaths to witness at such periods.

THE POSITION OF IODOFORM IN THE ANTI-SEPTIC TREATMENT OF WOUNDS.

The reports of the almost magical results with iodoform as an antiseptic, especially in the treatment of wounds or in operations upon tubercular soil, have been followed quickly by warning voices, which want to banish this antiseptic entirely, on account of its many dangers. The

latter are classed by Klüster under the following heads:—

1. *Local Disturbances*:—

(a) Iodoform acts as a foreign body, causing partial non-union or fistulous openings, through which the drug may become eliminated as a worm-like pulp.

(b) Iodoform may cause a phlegmon, on account of mechanical irritation, probably. The inflammation, often accompanied by fever, shows itself as a diffuse, firm infiltration of the skin, of a slightly purplish color, which is only slowly absorbed.

(c) Iodoform gives less protection against erysipelas than carbolic acid.

2. *General Disturbances*:—

(a) Disturbances of digestion: food acquires the iodoform taste; the tongue becomes coated; anorexia follows; often diarrhoea supervenes, even with bloody admixture.

(b) Iodoform causes fever, especially in excitable patients, which may reach 106° F., while the pulse ranges between 120–160, with a clouded sensorium, a dry and fissured tongue, simulating septicæmia.

(c) Iodoform strongly impresses the nerve-centres, in the form of delirium, melancholy, contraction or dilatation of pupils, amblyopia; even mania, has been observed; also loss of sensation (which, however, might have been peripheral).

(d) Iodoform may cause death by irritation of the respiratory tract or of the nerve centres.

Since, however, it would be a step backward to throw away a remedy which, especially in scrofulous or tuberculous changes of the joints and bones, has so far surpassed in its beneficial effects all antiseptics hitherto known, it will be well to listen to the voices of Kœnig, Leisrink and others, in whose hands iodoform has shown itself uniformly efficacious, without the appearance of a single untoward symptom. Their success is simply due to their manner of application of this antiseptic. They have given up the application of larger quantities of iodoform in substance, as well as the iodoformed cotton; the former, on account of the danger from ab-

sorption; the latter, on account of the imperviousness to the secretions of the wound, often met with. Their aim is to use as little iodoform as possible, and they obtain it with the iodoformed gauze, applied in the following manner:—

(1) Upon all fresh wounds, which are not tuberculous, whether they have been closed by sutures or not, 6x8 layers of iodoform gauzing are placed, and covered by a compress of cotton, gutta-percha paper and a tulle binder.

(2) In all tubercular wounds of bone, joint or soft parts, the walls of the wound are once rubbed over with iodoform, as little in quantity as suffices to reach every part of the wound; (1½–2 drachms have always been found enough). Upon the wound, which has been closed by sutures or left open, the same 6x8 layers of iodoform gauze and compress is laid as upon ordinary wounds. At any further change of the dressing only the gauze and compress are renewed, but not the sprinkling with iodoform. The results in all cases of this class are far superior to those obtained with Lister's method.

(3) In all wounds of cavities (in mouth, nose, vagina, rectum), only iodoformed gauze is used.

Of course, during the operation, and at every change of the dressing, the ordinary antiseptic precautions, with the exception of the spray, have been observed: Cleaning of the field of operation, of the hands of the operator and assistants; rinsing of the wound with a 2 per cent. solution of carbolic acid during, and with a 5 per cent solution at the end of the operation. The latter seems especially indicated, since the disinfecting action of the iodoform is not an immediate one.

A PURER KERATIN.

Organic chemistry is daily increasing this world of wonders. We notice more and more how economical nature is, and with what simple means she often produces great results. WILHELM LINDVALL recently has subjected the egg-shell membrane to a most careful analysis, and published his very interesting researches in the *Upsala Läkarefören Föreländl.*, xvi, 7, p. 546, etc., 1882.

HAMMARSTEN had found that the egg-shell membrane exhibited in all its reactions, and especially by its great resistance to acids in the warm temperature of heated rooms, an intimate relation to elastin, and HILGER has proven the egg-shell membrane to be a substance identical with the elastin prepared from the ligamentum nuchæ, and that even the structure of this membrane denoted a changed elastic tissue. But investigations which LINDVALL made under HAMMARSTEN'S guidance gave such results that this similarity must be doubted.

An alkaline solution of the egg-shell membrane was made and neutralized, when a very strong development of sulphuretted hydrogen took place, and the addition of acetate of lead caused an undoubted reaction of sulphur, while elastin is perfectly free of sulphur. This result suggested keratin, which, as is well known, is characterized by its great percentage of sulphur.

Prof. HAMMARSTEN then made a careful analysis of the egg-shell membrane, and found that it consisted mainly of a body, the composition of which was 49.78 per cent. C. ; 6.64 per cent. H. ; 16.43 per cent. N. ; 4.25 per cent. S. and 22.89 per cent. O. But this is almost the identical formula of keratin, with the only difference that keratin prepared from other sources contains a higher percentage of carbon. It has long ago been demonstrated that the percentage of carbon in keratin depends upon the source from which the latter is derived. Now the nearest in the percentage of carbon to the keratin of the egg-shell membrane is the one derived from epidermic tissue (skin, hair, wool, etc.). It seems that the easier foreign substances can be eliminated, the less is the percentage of carbon in keratin, and that, therefore, the latter is the purer, the smaller its percentage of carbon. The keratin derived from the egg-shell membrane must actually be considered, therefore, the purest keratin, so far, artificially produced.

Concerning qualitative reactions, the egg-shell membrane possesses also the common qualities of keratin. The membrane has a strong resisting power to caustic alkalis at the usual temp-

erature of a room, and shows the same relation to mineral acids as other tissues rich in keratin.

It seemed interesting to note the results of decomposition of keratin derived from the egg-shell membrane, and LINDVALL exposed it, therefore, to the action of caustic alkalis and of mineral acids. At first he thought that by neutralizing an alkaline solution of this keratin a pure peptone was gained as a result, but this could not be fully demonstrated; when, however, the keratin was boiled with sulphuric acid a dark brown solution formed, which on being neutralized with a boiling solution of baryta resulted, after the necessary procedure, in a crystalline precipitate, exhibiting under the microscope the perfectly typical crystals of leucine and tyrosine, the latter in surplus.

As the most important result of these researches LINDVALL considers the fact that the keratin, if boiled with an alkaline, probably by hydration, splits into an alkaline albuminate and into peptone, though the latter cannot be freed from impurities and isolated.

NOTES AND COMMENTS.

Arsenic and the Secretion of Milk.

Dr. Dolan has been the first physician to detect in the milk of a mother who regularly and in medicinal doses (daily dose 0.012 arseniate of potassium) had been taking arsenic for some time, decided trace of this drug. His case is the only one of the kind on record.

The question, if certain medicines, when given to the mother, will be transmitted by the milk, has given rise to many investigations, which so far have led to positive results as regards iodine and iron. That these are transmitted cannot be doubted any more. As concerns mercury the reports vary, and this point is not decided as yet. Beneke and Pauli have demonstrated the presence of salicylic acid in the milk, while the same fact as regards quinine has been denied.

At one of the last meetings of the Berlin Medical Society (Feb. 15, a. c.) this subject came up for discussion, and Dr. Ewald declared that of arsenious acid he had not been able to find in the whole literature any other proof for its transmission in the milk than the one quoted above. Ewald then, himself, reported the following case:—

In the spring of last year he was called to a lady, aged 22, who suffered from prosopalgia, of an intermittent type, the pains being very severe, commencing during the night and lasting from two to three hours. During daytime they were absent. These pains had first appeared after confinement, and had then continued for several weeks. As all other remedies (quinine, morphia, chloral, etc.) had been tried unsuccessfully Ewald concluded, notwithstanding the lady was nursing her child, to use arsenic (solut. Fowl. one part, water two parts, daily dose thirty drops), and he did so with such good result that the pain ceased by the fifth day.

Ewald made several times daily a careful analysis of the milk, but he never found the slightest traces of arsenic. The transmission of the latter in the milk must, therefore, be seriously doubted.

Acute Myelitis with Double-sided Neuritis Optici.

The following case, which Dr. Henry D. Noyes had under his charge and reported in the *Arch. f. Akkde*, x. 3, p. 381, is in so far of great interest, as the issue of the case was remarkably favorable, ending in an almost complete cure.

A minister of the church, 25 years old, and an habitual and inveterate smoker, but otherwise in perfectly good health, began to suffer first from constipation and then from difficulty in urinating. At the same time he complained of a cold sensation in his lower extremities and could cross one leg over the other with exertion only. First, vision of the right eye, and, about a week later, vision of the left eye also, became very much impaired. In both eyes, but especially in the right, the inner half of the papilla became swollen and hyperæmic. Besides concentric narrowing of the vision there existed also a central defect. Large doses of iodide of potassium were given the patient internally, and the neck and back over the spinal column were cauterized. Gradually the patient reached the enormous dose of about five drachms (18 grams) of iodide of potassium per diem, and this medication was continued for fully one month and a half. The scotoma cleared up totally; two months later both eyes possessed their normal power of vision and a perfectly clear field of vision had been regained. But occasional giddiness, headache, and some difficulty in micturition, notwithstanding a normal composition of the urine excreted, were still present.

In consequence of the favorable issue of the case it must always be an open question, if the diagnosis regarding the seat of the lesion—in-

flammatory affection of the spinal cord, accompanied by a morbid change confined to the commissure of the optic nerve—was the correct one.

Two Cases of Tumor of the Brain.

Prof. H. Nothnagel has reported (*Wien. Med. Bl.*, 1, 1882) two cases of tumor of the brain, which are highly interesting from a diagnostic point of view.

In the first case Nothnagel diagnosticated a tumor in the corpora quadrigemina, basing his diagnosis upon the fact that these two symptoms, besides others, were present at the same time, an ataxia and double-sided paralysis of the oculo-motorius and of the abducens, in the following form: when looking upward the bulbi hardly moved above the horizontal line—toward the right side a little more but also imperfectly—toward the left side the left bulbous did not move at all, the right imperfectly—downward full motion but the left less than the right. At converging the rectus internus sinister kept behind.

In the second case existed a tumor in the left cerebral hemisphere and Nothnagel had diagnosticated a tumor in the posterior fossa, basing this opinion upon the following group of symptoms: vertigo, staggering in walking and standing, inclination to fall backward, paresis of the facialis, especially the crossed paralysis of the abducens with slight paresis of the extremities, but no perfect paralysis of the latter.

With reference to these cases Nothnagel thinks that he cannot sufficiently insist upon the great caution that should be exercised in the localization of tumors of the brain, as it is impossible, frequently, even to guess at the polypus-like extensions of such tumors.

Athetosis and Vasomotor-neuroses of the Extremities.

Dr. M. Bernhardt, in Berlin (*Sep. Abdr. Arch. f. Psychiatrie Bd. XII. H. 2.*) reports a case in which there is at present hemi-athetosis and hemianopsia of the right side. About three years ago, and after a serious illness of several weeks, duration, right-sided paralysis and aphasia developed themselves in the patient, a girl, then seventeen years of age; within a few weeks the aphasia improved, the hemianopsia, which had been existing from the very beginning, continued; the paralysis had given away to incessant and hasty motions of the right hand and the right arm; these choreic motions had also gradually disappeared, and there were left only slow, grasping motions of the fingers, which continued to

the present time, as did also the hemianopsy; the whole right side does not move as easily as the left. This case proves again the correctness of the view formerly expressed by Bernhardt, that athetosis is only a modified (mostly one-sided) chorea, a view which has been accepted now also by Charcot.

Bernhardt reports also two cases of local asphyxia of the extremities, an ailment which must be ascribed to a disturbance in the circulation of the blood in the peripheral parts of the body, but which is without doubt caused by a special morbid condition of the vasomotor centre. The constant current improved one case temporarily and cured the other permanently; quinine in divided doses had been unsuccessful in the first case.

Hypodermic Injections of Caffein.

The *Lancet* says that, owing to its very slight solubility in water, caffein has not hitherto been used hypodermically. M. Tanret has discovered that caffein dissolves readily in solutions of benzoate, cinnamate and salicylate of soda, the double salts being thus formed. Salicylic acid yields the salt most soluble in water. M. Dujardin-Beaumetz has employed these solutions hypodermically, and has ascertained that they do not irritate. Solutions for administration by the mouth may also be readily obtained in this manner.

Iodoform to Mucous Surfaces.

Application of iodoform in diseases of the mucous membranes (B. Fränkel, *Berl. Klin. Wochenschrift*, p. 252), have been found very beneficial in the following chronic affections of the cavities of the nose, pharynx, larynx, lungs, uterus, and of the conjunctival sac:—

(1) Tubercular ulcerations of the larynx are powdered with iodoform once a day. Ulcers appear cleaner, show granulation growth, while local morbid process retarded, but not cured; subjective symptoms improved.

(2) Phthisis pulmonalis is treated with vapors of iodoform (bottle half filled with water, iodoform thrown in: heating to 190° F. creates iodoform vapors), or inhalation of etheric solution of iodoform (1:60); subjective symptoms, especially cough, improved, fever reduced.

(3) Atrophic retro-nasal catarrh is treated with iodoform powder blown into nostrils or snuffed up, or the iodoform ointment (1:10 vaseline) applied on swab or brush, with excellent results; new life seems to be imparted to the remaining elements of the mucosa, which become more

succulent, its epithelium thicker, formation of crusts subsides. Of course, the same treatment for ozæna, with the same splendid results.

(4) Scrofulous rhinitis. Iodoform (1), tannin (2), vaseline (10), is applied with camel's-hair pencil or tampon (the latter on alternate days, into one or the other nostril); the rapidity of cure is astonishing.

(6) Of course, locally, upon all syphilitic affections of these cavities.

[(6) Applications to endometrium in chronic inflammation of this membrane, in powder or with cocoa-butter.

(7) In follicular conjunctivitis (second stage) in minimal quantities directly applied to follicles].

The Antagonism between Strychnia and Opium.

Dr. C. Harrison relates a case in the *Lancet*, which well illustrates the antidotal power of opium over strychnia. A man who had for some time been drinking very hard, mixed up a packet of vermin killer (containing $\frac{1}{4}$ of a grain of strychnia) with about a teaspoonful and a half of laudanum, added some rum and drank the mixture. He was seen about four hours after taking the poison, when he presented evidences of strychnia poisoning. He was given an emetic, which caused him to vomit freely, after which chloral hydrate sufficed to control the spasms. The case is interesting, as, after a poisonous dose of strychnia taken under the most favorable circumstances for absorption, fifty minutes elapsed before any symptoms became manifest, and the man was alive four hours afterward, although he had received no treatment. No doubt a fatal result was prevented and the intensity of the symptoms modified by the laudanum.

Apomorphia as an Expectorant.

We read in *le Journal de Thérapeutique*, that Dr. Beck used apomorphia as an expectorant in sixty-three cases of bronchial catarrh, and in thirty-one of broncho-pneumonia. The bronchial secretion becomes more fluid and the thick secretion common particularly in broncho-pneumonia is ejected with more facility. The prescription for an adult is as follows:—

R. Apomorph. chlorhydrat.,	gr. $\frac{1}{2}$
Ac. chlorhydric. dil.,	m. xv
Syr. simplicis.,	$\frac{3}{4}$ j
Aque,	$\frac{3}{4}$ iv. M.

The dose is a tablespoonful every two, three or four hours. A teaspoonful would be the proper dose for children of from three to ten years of age.

Subcutaneous Stretching of the Sciatic Nerve.

The patient (generally a case of locomotor ataxia) is placed in the recumbent position, brought fully under the influence of an anæsthetic, and the femur is then flexed forcibly on the abdomen. It is said that the sciatic nerve is stretched this way around the neck of the femur. Results gained in this manner by Nussbaum in Munich, and by Billroth in Vienna, have been satisfactory. Accidents like luxation or tearing of parts, which were feared by several English writers, have not been met with. Prof. Trombetta, in Messina, claims, in the *Lancet*, the priority in this bloodless operation.

Carbolic Acid in Blood Poisoning.

The French surgeon, Declat, has recently been making some noise about his discovery of the value of hypodermic injections of carbolic acid in blood poisoning. He extends its value to scarlet fever, smallpox, typhoid fever, etc., and declares that the potent little syringe enables him to "laugh at" these diseases. This is the extravagance of enthusiasm. There is some value in the method, but a limited one. Nor was Declat its originator. Four years ago Dr. N. B. Kennedy, of Texas, used and wrote upon the advantages of these injections, and in April, 1881, he read a paper before the Texas Medical Association, in which he claimed priority of all others in its employment.

SPECIAL REPORTS.**NO. IX.—OPHTHALMOLOGY.**

BY CHARLES S. TURNBULL, M.D.

Contagious Ophthalmia. On Croup of the Conjunctiva, with Remarks on the Treatment of the Contagious Forms of Conjunctival Inflammation. By H. KNAPP, M.D. *Archiv. Ophthalm.*, Vol. XI, No. 1.

The observation of so-called extreme cases is sometimes required to throw our mind away from the track of familiar views, into new channels of thinking. We then recognize the significance of certain manifestations which we failed to appreciate so long as we noticed them only in low degrees of development. Such an extreme case, from the common group of muco-purulent conjunctivitis, came under my care lately, and forced me to change my opinion of that kind of inflammation, which several authors have described as croupous or membranous conjunctivitis.

Mild cases of this affection, are not infrequent. They begin under the form of acute catarrh or moderate blennorrhœa, but soon are

distinguished by the formation of thin, whitish membranes, covering the palpebral portions of the conjunctiva. Under the ordinary treatment of astringents, cold applications and careful cleansing, they get well in from three to six weeks. Having seen so frequently that the membranes had no appreciable influence, either on the gravity or the course of the disease, I did not consider them as an essential feature of the disease, and classified the cases mostly as acute catarrh. Sometimes, when the discharge was more puriform than mucoid, as acute blennorrhœa.

C. S. Bull, in the third American edition of Scelberg-Wells' text-book, devotes fifteen lines to croupous conjunctivitis, in which he says: "This form has been regarded by some English and Continental authorities as a distinct variety of conjunctivitis, but there seems good reason to doubt this. * * * The treatment consists in stripping off the membrane and cauterizing the surface, as in catarrhal or purulent conjunctivitis."

H. D. Noyes, in his recent treatise on the diseases of the eye (Wood's Standard Medical Library, 1881), devotes a page and a third to "Croupous, or diphtheritic conjunctivitis," (p. 168). Though he describes croup and diphtheria under the same title, he points out the principal distinction between the two forms of exudation, but also regards the croupous membrane as an unessential feature of muco-purulent ophthalmia.

I have changed my opinion on this subject, and concur with Arit,* Stellwag,† Saemisch,‡ and Wecker,§ who, especially Saemisch, give clear descriptions of the disease, and state that we have to consider croup as a distinct form of conjunctival inflammation. It differs from catarrh, blennorrhœa, and trachoma, by the presence of the characteristic whitish membranes, and from diphtheria, by several points, which I beg leave especially to mention:—

1. In diphtheria the lids are very stiff and hard; it is difficult or impossible to evert them; in croup the lids are supple and soft, and can be easily everted.

2. The diphtheritic lid is unusually hot and painful to the touch, whereas the croupous lid can be handled without much pain.

3. The diphtheritic exudations are continuous

* Text-book, first edition, 1851, p. 85, and his next text-book, *Klinische Darstellung der Krankheiten des Auges*, 1881, pp. 16-19.

† Text-book, fourth edition, 1870, p. 423.

‡ Graefe-Saemisch's Handbuch, Vol. IV, No. 1, pp. 94-101.

§ Wecker-Landolt, *Traité Complet d'Ophthalmol.*, 1878. Tome I, p. 320.

from the deposit on the surface, through the superficial and deeper layers of the conjunctiva, whereas the croupous exudation is a surface deposit only.

4. The diphtheritic membrane cannot be easily removed, but must be torn off with some force, leaving the subjacent tissue pale and ragged; whereas the croupous membrane can be wiped off as a whole, leaving the subjacent tissue dark red, bleeding, and uneven—finely nodular.

5. The tissue of the diphtheritic lid when cut into is anæmic, and has, in the developed cases, a white, lardaceous appearance, whereas the tissue of the croupous lid is highly congested and soft.

6. The diphtheritic process leads to mortification of the invaded conjunctiva; the croupous process to proliferation, and cauliflower or polypoid excrescences.

7. Diphtheria readily extends from the lids to the bulbar conjunctiva and the cornea, whereas croup is long limited to the lids, and only the severest cases affect the cornea, and seem always to leave the scleral conjunctiva free.

Croupous conjunctivitis begins with the symptoms of an acute catarrh, or mild blennorrhœa, but soon characterizes itself by deposition of whitish membranes on the retrotarsal folds of both lids, extending toward the front of the conjunctiva and the free edge of the lids, as far as the so-called papillary body is found. The membranes consist of coagulated fibrine enclosing lymphoid cells in varying quantities. They may cover the palpebral conjunctiva in patches only, or as a continuous layer of 0.1 mm. to 1.5 mm. in thickness. They can be more or less wiped off, and are quickly reproduced. The surface from which they are detached is dark-red, easily bleeding, uneven, not ulcerous, but finely granular. The lid is moderately swollen, not very sensitive, and can be everted without much difficulty or pain. The discharge is sero-mucous or sero-puriform and moderate. The progress of the disease is marked by the uneven swelling of the papillary body passing over into proliferation, with the production of smaller and larger cauliflower, and polypoid excrescences. The pseudo-membranes cover all the productions, dip into the depressions and crevices of the proliferous conjunctiva, and cannot be detached without lacerating and tearing off portions of the conjunctiva, thus causing effusion of blood, which shows a high degree of coagulability. Croup, in contradistinction to diphtheria, seems never to affect the scleral conjunctiva, and only exceptionally the cornea, there producing ulcers. These ulcers may be superficial, and disappear in a

short time, or become more extensive, occupy and destroy the whole cornea. From their whitish aspect and firm, even surface, which is rather raised than depressed, I am inclined to believe that they also are covered with a croupous deposit. Even in that stage they are capable of restitution, leaving an unexpectedly small corneal patch, when compared with their former size and intense milky opacity. They are complicated with consecutive plastic iritis, which may get well without adhesions or papillary obstruction.

Course.—The milder forms of the disease are not infrequent, the severest ones very rare. The characteristic croupous stage seems to follow the catarrhal initial symptoms in a few days; may last for one or several weeks, or from two to six months. When the membranes disappear they get softer, thinner, and brittle; the discharge then is muco-purulent, but still moderate, when compared with genuine blennorrhœa.

The nature of the disease consists in a swelling and proliferation of the papillary body of the conjunctiva, and the formation of fibrinous pseudo-membranes, which are interspersed with lymphoid cells and deposited on the surface, infiltrating the tissues of the lid. Its causes are those of catarrh and blennorrhœa. The disease is contagious and mostly affects both eyes. A constitutional predisposition may, perhaps, be admitted, as the catarrho-blennorrhœic conjunctivitis, which in asylums goes from one inmate to the other, only in a few assumes the croupous character. Croupous conjunctivitis, like pharyngo laryngeal croup, is prevalently a disease of childhood. Some patients have croup of the eye and sore throat simultaneously.

The prognosis, on the whole, is favorable, the disease showing no marked tendency to affect the cornea, and, unlike diphtheria, leading to no gangrene of the parts affected.

As to the treatment, I can only concur with Arlt and Saemisch, in advising to abstain from all kinds of irritant medication as long as the formation of the pseudo-membranes is still active. Uninterrupted application, day and night, of iced compresses to the lids, and careful washing away of the secretion with a soft sponge dipped in a very weak solution of chloride of sodium, chlorate of potash, and the like, should be enforced so long as the inflammation is progressing or at its height. As soon as the swelling decreases and the membranes break off, the cold applications may be limited to an hour every morning, noon and evening, and gradually left off. Weak solutions of nitrate of silver then seem to

be the best remedy, and also mild touching with the sulphate of copper crystal acts beneficially. Saemisch thinks that in a few mild cases he has cut short the progress of the disease by dusting powder of sulphate of quinine on the affected conjunctiva. I have no experience on the use of quinine in this manner, and Saemisch himself warns us not to use it in severer cases, lest the powder, acting as a foreign body, stimulate the inflammation.

I beg leave to take this opportunity for making some remarks on the utility of methodical applications of cold in the severer forms of conjunctivitis, and on the general management of these affections. They are all contagious, yet not in such a manner that an infection through micro-organisms or other substances floating in the air need be feared. Practically, the disease is transmitted only by inoculation. Under proper care, the most virulent gonorrhoeal or diphtheritic inflammation of one eye is never transmitted to the fellow eye, even if left open; a fact of which I have convinced myself by hundreds of cases treated in hospital or private practice. Under proper care? What is proper care? Proper care is two skilled and trusty nurses, the one for the day, the other for the night, who never leave the patient; further, a rational physician who is not too meddlesome a therapist. I speak now of ophthalmia neonatorum, blennorrhoeic or gonorrhoeic ophthalmia of the adult; of croupous and of diphtheritic ophthalmia; also of the acute stage or acute paroxysms of trachoma. The treatment of all of these cases is the same, and amounts to this: So long as the disease is on the increase or at its height, abstinence from all but indifferent local remedies, methodical and uninterrupted application of cold, and careful cleansing; in the stage of decline, the same treatment in milder form; in torpid and protracted cases, astringents or mild caustics.

The infant of three days and over, who has blennorrhoea, should have cold applications day and night, by means of thin iced compresses, which cover no more than his burning eyelids. Every fifteen to thirty minutes the lids should be gently separated and the secretion carefully washed out with a fine, soft sponge, dipped in a very weak solution of common salt, chlorate of potash, and the like. Several sponges should always be at hand, kept in an abundance of pure water, so as to keep them perfectly clean. There is no material equal, in softness and efficiency, to fine sponges. To see that they are free from infection is our business, and a very easy business it

is, for among all the disinfectants there is one which, unshaken, has stood the test of time: abundance of water. There is no contagion that is not made harmless by sufficient dilution; contagia can all be drowned. As soon as the little sufferer shows the least tendency to open his eyes, he should be encouraged in his endeavors. Darken the room moderately, so that the influence of bright light does not make him shrink. The opening of the eye is beneficial in two ways: 1st. The movements of the lids beat the corrosive secretion out of the conjunctival sac. 2d. They accelerate the circulation in the affected parts, thus diminishing congestion, stasis, and infiltration. We know that the venous circulation in the extremities of our body is materially favored, I mean mechanically assisted, by muscular action. When a child opens his eyes, the danger is over, only a relapse must not be allowed to occur. The iced applications have to be continued, until the swelling of the lids and the creamy character of the discharge have disappeared. No child need lose its eyes from ophthalmia neonatorum, and no child does, if faithfully treated in the way just described. I unhesitatingly commit myself to this assertion, since the cases over which I had full control terminated favorably, and they count, not by the dozen or hundred, but by the thousand. Other modes of treatment may be good—and there is no doubt that certain eyes escape destruction under all kinds of treatment—but the one pointed out is capable of saving them all, and only in order not to be absolute I admit the restriction of saying, "almost all." But great and incessant care is needed. Prophylactic measures, such as cleansing the vagina before and during delivery, and washing the child's eye with weak, so-called antiseptic solutions, of which nitrate of silver one-tenth to one-fifth per cent. is the best, may be useful, and need only be mentioned. I cannot speak with the same satisfaction of the results of the treatment of gonorrhoeic ophthalmia in adults, though the same plan of treatment pursued with the same rigorousness and persistency saves, as far as my experience goes, the great majority of cases. Slitting of the outer commissure, if there be great tension, is beneficial, but can almost always be avoided, since the cold keeps the swelling down. The proposition of Critchett, of London, to divide the upper lid in its centre, in order to save the cornea from destruction, need certainly not be adopted.

What good the application of cold may do in croupous ophthalmia is exemplified by experience.

In diphtheria of the conjunctiva I know of no more important remedy than the energetic and persistent application of cold. I cannot countenance the proposition of Mooren and Berlin, by warm applications to abridge the true diphtheritic stage and lead the process more quickly over into the less dangerous blennorrhœic stage, since I am convinced that nothing is so powerful in diminishing the violence of this dreadful inflammation as cold, and I am afraid that warmth may temporarily increase it and favor destruction of the cornea. I have to differ from the statement of Dr. Noyes and others, that diphtheria of the conjunctiva is a very rare disease in New York. My former assistant, Dr. Born, has taken notes of over seventy well marked cases during the three years that he was house surgeon at the Ophthalmic and Aural Institute. The great majority of those cases, as well as others in my private practice, were cured under the above plan of treatment, persistently carried out. What good the same plan, though less rigorous, may do in severe cases of trachoma, few persons who have not witnessed it would believe. A patient may go for months, and even years, to the dispensary, and then show the usual alternation of better and worse, till a new crop of granulations, or blindness from corneal opacity, compels him to enter the hospital. He is treated with iced compresses several hours during the day, is directed to dip his face into cold water, and is admonished by every moral effort, assisted, if necessary, by mechanical appliances, to keep his eyelids open as much as possible; his lids are touched with the sulphate of copper crystal, and the improvement in most cases is very marked, not to say astonishing. In the course of three or four months I have seen trachomatous lids restored to a healthy condition, with scarcely perceptible cicatrices, and a trachomatous cornea, through which fingers could not be counted, so much clear up that fine type could be read.

What I have said is only a sketch, and if I did not trespass on your time and indulgence, I would fain say more, for I am deeply impressed with the fact that among all questions in ophthalmology—that of cataract, perhaps, excepted—there is none so important as the treatment of contagious ophthalmia."

(To be Continued.)

—M. Gibony has discovered that healthy rabbits become tuberculous if exposed for some time to air expired by animals in a consumptive state; but if this air is charged with carbolic acid it does not produce the disease.

CORRESPONDENCE.

Cinchonidia as an Antipyretic.

ED. MED. AND SURG. REPORTER:—

During the last session of the Alabama State Medical Association, in Mobile, Dr. George A. Ketchum, of Mobile, the leader of the Omnibus discussion, a notable feature of our meetings, presented, as one of the topics for open and general discussion, quinine, which was ably and elaborately treated in its practical bearing by him. The value of cinchonidia was also presented by some of us who had large practical experience in its use, comparatively with quinine.

The question was asked as to its antipyretic value. It will be answered briefly, from one point, by referring to an aggravated case of double pneumonia, in a young negro man, whom I saw on the 17th of May last, the worst case of the worst disease the black man has to contend with, that I have, in more than 26 years' practice, seen recover. Those who have long been accustomed to treating pneumonia in the negro, know its great fatality, much, very much, greater than in the white. Realizing the fact, and inferring the cause, I was readily able to attach great scientific and practical value to the first article that I ever saw which demonstrated, beyond doubt, by many post-mortems, the true cause, which was found to be the greatly smaller lung capacity, proportionately.

This article was by Dr. A. W. McDowell, in the *Practitioner* of September, 1874, and was reprinted in *Compendium* of January, 1875. At different times I have called attention to the fact as corroborating my own views, and credit has been given to me in some elaborate articles, particularly in one by Dr. Alex. Rattray, of San Francisco, in a careful, and certainly, very able article on the "Physiology of Climate, Season, and ordinary Weather Changes." I take this occasion of disavowing the original presentation of the matter. The credit is due to Dr. McDowell, the result of many post-mortems by him at Benton barracks, giving us light, based on anatomical observation, that cannot be gainsayed, and entitles him, justly, to great credit for his thorough work and necessary practical deductions, which give us an infallible guide in the general treatment of our cases.

This man, a laborer on the railroad, had been brought home the day before I saw him, then sick six days. At 9 A.M., on the 17th, I found him with a double pneumonia, stupid, tongue red, disposed to be dry, very deaf, scanty expectoration, and that almost black; pulse 100; temperature 104½°; abdomen slightly tympanitic, not tender nor even the bowels loose. He had, for the next twenty-four hours, 20 drops of turpentine every three hours; occasional small doses of Dover's powder, to control the harassing cough, with what I rarely ever use in the negro, and especially this late, *veratrum*, in small doses, every three hours, used simply as a depurant in its action on the kidney.

At 9 A.M., 18th, pulse 108; temperature 105°; respiration very rapid. He was then ordered at once a prescription which was continued as long as any medication was needed.

R. Potass. iod., gr. lxiv.
 Water, fʒj.
 Sp. lav. co., fʒij.
 Glycerine, q.s. ft. mist., fʒij. M.

Sig.—Teaspoonful every four hours.

To each dose was added, when given, twenty drops of turpentine, this to be omitted when the kidneys were affected. Dover's powder mixture, as needed, to control cough. Buttermilk and lemonade freely. At 5 P.M. temperature was 104½°; same general symptoms. In addition to above treatment, was ordered twenty-five grains of cinchonidia, at 4 A.M., 19th inst. At 8 A.M. pulse 100, temperature 101°, respiration 42, tongue red, rather dry. Treatment continued. At 4 A.M., 20th, he had fifteen grains cinchonidia; at 8 A.M., 20th, pulse 88, temperature 100°, respiration 40. At 4 A.M., 21st, he had the same dose of cinchonidia; at 8 A.M. pulse 88, temperature 99½°, respiration 32. At 4 A.M., 22d, fifteen grains of cinchonidia; at 8 A.M. pulse 76, temperature 99½°. At 4 A.M., 23d, he had fifteen grains of cinchonidia; at 8 A.M. pulse 72, temperature 97½°, respiration 24. From this time no regular record was kept, and save a complication of rheumatism of the left hip, he went on to steady convalescence, and this morning was able to walk to my gate to inform me of the birth of a son. He did not desire whisky or any stimulant, and had none. Lived for two weeks, or more, exclusively on buttermilk, which he had in large quantities, the alkaline condition of the blood creating a craving for this acid nutritive. This case very plainly answers the question as to the value of cinchonidia as an antipyretic in a disease which sorely tries all our skill and resources. The iodide of potash has its decided and distinct value in the second stage of pneumonia, and I was more particularly led to its use from the fact that typhoid fever has been endemic with us for more than a year, and all diseases tend to low form. I had many years ago heard of the use of iodide of potash in typhoid fever, but the first case that presented itself, in a child of rheumatic antecedents, I was compelled to use it, which I did solely, through the disease till convalescence.

I have treated twenty-three cases in a little more than a year. It is now my general custom, when I cannot conveniently or properly use the treatment suggested by me in the REPORTER of April 20th, 1872, and recently advised again at the last session of our State Association, to give in these cases, every four hours, full doses of the syrup of lacto-phosphate of lime, and between each dose, to an adult, four grains of iodide of potash dissolved in a teaspoonful of glycerine, to which recently I have also added, with very satisfactory results, at the suggestion of Dr. Moody, of Pickens county, Alabama, with each dose one or two drops, according to the gravity of the case, of carbolic acid, strong, the crystals. At the time of reading I was greatly impressed with the immense practical value of the article on "The Thermometer and its Use in Medicine" in the REPORTER of February 11th, 1882, by Dr. Hugo Engel, which every young physician, and old one too, for that matter, that can get it, should read, and read, and re-read, and fix in the memory.

Recently, in a severe case of typhoid fever in the third week, a black woman, the morning thermometer read 104½°; very sick. The next morning at the same hour it read 100°; too rapid a fall to bode any good. Like the barometer, foretelling the storm, I felt satisfied mischief was coming and that I might look out, with almost unerring certainty, for a hemorrhage from the bowels. To the treatment of iodide of potash and carbolic acid and turpentine in twenty drop doses, which I always add on first approach of dry tongue, I added at once a decided hypodermic of morphine, enjoined perfect quiet, artificial warmth, whisky freely, and ten grains of Dover's powder after every action. Sure enough it came, and came with a rush, in twenty-four hours. The above treatment, with perfect quiet, tided her through this peril, which gave way on the fourth day, and she went on to convalescence. This instructive case is simply added to the above to enforce the necessity of the use of this instrument of precision, without which we must be very often in the dark as to our diagnosis, prognosis and treatment.

EDWARD H. SHOLL, M.D.,

Gainesville, Ala.

Medical and Surgical Supplies on Railroad Trains. ED. MED. AND SURG. REPORTER.

Your very timely articles in two late numbers of your journal, calling the attention of railroads and the public to the want of proper medical and surgical facilities in case of accidents upon railroad trains, were read with interest.

The subject has come to my notice upon two or three occasions in particular. I am well pleased that you have taken up the consideration of the matter, and trust that your efforts will not cease until some proper action has been taken by the railroad companies, or legislation enacted by the proper law bodies.

Within the past year I have had two very striking illustrations of the importance of having upon railroad trains, and within easy reach, certain medicines and appliances, in case of accident.

While running at quite a speed, along a prominent railroad, the engineer of our train spied a man lying upon the road between the two tracks. The night was dark, and it appeared that a train going in the opposite direction had run into this person, who was walking on the track, on his way home from work. The accident being unperceived by the train hands, the train did not stop. For quite a while, therefore, until our train came along, did the man lie in suffering.

We were not many miles from the city, and the conductor ordered the man to be taken upon the train and conveyed to the depot.

The poor fellow was in terrible agony, and being stout and the car steps high, it was painful to witness the suffering it caused the man in the attempt to place him in the car.

Had the car been supplied with a stretcher, much time and trouble could have been saved, and the man made to feel his wounds less keenly.

Somewhat belated, the train rushed along with considerable speed, and with every motion of the car I could see that the jolting gave the man pain. We were obliged to lay him upon

the bare baggage car floor, with a chair cushion only under his head.

Not a drop of medicine or stimulant was obtainable from the train hands, to relieve pain or to strengthen him until the depot could be reached.

Fortunately, however, I had my hypodermic syringe in my pocket, with which I injected into the man's arm a quarter of a grain of morphia, which gave him some ease.

The other instance was furnished in the case of the baggage master of a train upon a branch of the same road. While leaning out of the baggage car side door, the baggage master was struck by a projection from a bridge, and his skull fractured.

I was summoned from the rear end of the train, and soon hastened to where the man lay.

Not a thing, except ice water, was on hand, excepting, too, the whole-souled willingness of all hands to do what they could; but of what avail was all this without the means of keeping up the heart impulse and strength of the patient, in hopes of eventually saving his life.

I now make it a rule never to travel without my medicine satchel and instruments. On this occasion they were, fortunately, with me. The man was pulseless; his heart beat so feebly as hardly to be heard. Another physician happening on board, and who ably assisted me in every effort, agreed with me that digitalis must be given the man or he would die before the depot was reached.

An injection under the skin was made, of a strong tincture of the drug, which I procured from my satchel, with the hopeful result of bringing back the pulse and the respiration. Thus we worked, with the medicines, etc., I had on hand.

What are doctors, in case of a need of medical aid, without medicines? What are they without the means whereby to perform the necessary preliminary work in case of accident to body or limb? In some cases useless, I say; in others their efforts are crippled.

The two cases I cite are mild; I need but mention the frightful accidents frequently occurring on railroads, far away from hamlet, village or city, with no opportunity for summoning a physician—the nearest one living, perhaps, many miles away—to show that there are times when some such thing is needed as that to which you refer—a full supply of medicines and surgical appliances, so that if doctors be present they have the means at hand for rendering the necessary assistance; or, if physicians are not near, so that the cooler and more intelligent of the train-men or passengers can contribute to the relief of the wounded until medical aid arrives.

To the list contained in your second editorial I would suggest the addition of digitalis and brandy—though no doubt, in ignorant hands, the administration of the latter to excess results in more evil than good.

In the two cases to which I refer the railroad did all they could for the comfort of the patient after reaching the depot; but how much suffering might not be saved if the measure for which you have so warmly pleaded were adopted.

Let the employés upon every railroad—one or all upon each train—be given, as part of their

general instruction, some explicit directions concerning the care of the sick or wounded in case of illness or accident. A woman grows sick, and there is nowhere to lay her. In fact, there are, as a rule, no accommodations for the sick upon railroad trains.

Corporations governing railroads should, therefore, drill the train hands, as it is proposed to drill the police force, in the means to adopt in case of emergency, with no physician nigh, and set apart some portion of a train for the reception of the sick or injured.

G. MAXWELL CHRISTINE, M.D.

1105 Diamond St.

A Case of Poisoning by Brucia.

ED. MED. AND SURG. REPORTER:—

I was called in haste, the other day, to see a vigorous middle-aged man, who was suffering from the effects of an excessive dose of medicine taken two hours before, after a meal, prescribed for backache by an old, irregular, occasional practitioner, who claimed to have been at one time a surgeon in the Prussian army. I found the patient with dread pictured in his face, holding by the arms of the chair in which he sat, afraid to move or be touched lest he should fall into convulsions. He had decided symptoms of poisoning by brucia, which are essentially similar to those by strychnia. An emetic was given, and after repeated doses of chloral, an anti-spasmodic, which is thought to be a physiological antidote. Two fifths of a grain of morphia was given hypodermically. In five hours from the taking of the dose (two grains) the convulsive state had largely disappeared. The prescriber claimed that his prescription was copied from a German handbook of popular medicine (published in 1840), and that only a medium dose, according to the book, had been ordered, which I found to be the case. Twelve grains of brucia and half a drachm of conserve of roses, to be made into twenty-four pills, four of which were to be taken twice a day, constituted the prescription. An ounce of ointment, containing twenty grains of veratrin, was also ordered.

The proper dose of brucia is not explicitly stated in most of the books. It is placed at not more than half a grain to begin with, by some. It would seem that, as met with, it is an article of very variable constitution.

A moral: The ignorant use of powerful medicines by any one is a bad business.

THOS. S. SOZINSKEY, M.D.

Philada., July 29.

NEWS AND MISCELLANY.

Registration of Medical Practitioners in Pennsylvania.

The following is an abstract of the report of the Committee on Medical Legislation, read before the Medical Society of Pennsylvania, at its last meeting. Statistics have been collected from all the counties. In most of them registration has been completed. About 500 practitioners have not yet registered. If our Legislature could be

induced to give us a State Board of Health, with authority to supervise registration, much better results might be secured. One hundred and five females have registered.

NAMES OF SCHOOLS.	NO. OF GRADUATES.
University of Pennsylvania.....	1856
Jefferson Medical College.....	1695
Pennsylvania Medical College.....	150
Woman's Medical College.....	60
Hahnemann Medical College.....	287
Homœopathic Medical College.....	115
University of Philadelphia.....	10
Penn Medical University.....	5
Phila. University of Medicine and Surgery,	68
American University of Philadelphia.....	19
Eclectic Medical College.....	71
Philadelphia Electropathic Institute.....	4
Franklin Medical College.....	4
Penn Medical College.....	33
Penn Medical Institution.....	4
Philadelphia College of Medicine.....	16
Medical College of Pennsylvania.....	10
Philadelphia Medical College.....	33
Medico-Chirurgical College.....	4
Female Medical College.....	3
Allentown Medical College.....	1
Eclectic Medical Association.....	1

3947

The following were graduated by schools in other States:—

NAMES OF SCHOOLS.	NO. OF GRADUATES.
Bellevue Hospital Medical College.....	175
University of Maryland.....	95
University of New York.....	53
University of Michigan.....	95
Coll. of Physicians and Surgeons, Baltimore,	125
Rush Medical College.....	16
Long Island Medical College.....	39
Western Reserve Medical College.....	91
College of Physicians and Surgeons, N. Y.,	28
University of the City of New York.....	51
Cleveland Medical College, Ohio.....	74
University of Vermont.....	12
Central Medical College, Rochester, N. Y.,	6
Dartmouth Medical College.....	6
University of Buffalo.....	67
St. Louis Medical College.....	4
Chicago Medical College.....	7
Bowdoin Medical College.....	4
Columbia Medical College, New York.....	9
Detroit Medical College.....	10
Coll. of Homœopathic Phys. and Surg., Mo.	4
Homœopathic Medical Coll. Cleveland, O.	34
New York Homœopathic Medical College.....	20
Homœopathic College, Ohio.....	15
Hahnemann Medical College, Illinois.....	10
New York Medical University.....	3
University of Louisville, Kentucky.....	61
Albany Medical College.....	24
Wooster University.....	40
New York University Medical College.....	5
Harvard Medical College.....	10
Washington University, Baltimore.....	22
Miami Medical College.....	34
Medical College of Ohio.....	30
Cincinnati College of Medicine and Surgery.	31
Cincinnati Medical College.....	14
University of Georgetown, D. C.....	5

Starling Medical College.....	11
Kentucky School of Medicine.....	7
Eclectic Medical College.....	39
Pulte Medical College.....	8
Eclectic Medical Institute, Ohio.....	32
American Medical College, St. Louis.....	4
Coll. of Physicians and Surgeons, Keokuk.....	6
Physio-Medical College, Cincinnati, Ohio.....	11
Eclectic Medical College, New York.....	22
University Medical College, New York.....	6
United States Medical College, New York.....	8
Hygeo-Therapeutic College, New York.....	7
Georgia Eclectic Medical College.....	1
Memphis Medical College, Tennessee.....	1
St. Louis Coll. of Physicians and Surgeons	2
Willoughby University.....	3
Missouri Medical College, St. Louis.....	2
University of Tennessee.....	1
Detroit Homœopathic Medical College.....	1
Medical College of South Carolina.....	1
Atlantic Medical College.....	1
Phisic Medical College.....	3
University of Cincinnati, Ohio.....	1
National Medical College.....	6
Botanic Medical School, Ohio.....	2
Geneva Medical College.....	17
Rensselaer Medical College.....	1
Buffalo Medical College.....	8
Berkshire Medical College.....	10
Fairfield Medical College.....	1
Louisville Medical College.....	4
Columbus Medical College.....	18
University of Cleveland.....	1
Columbian Medical College, D. C.....	5
Castleton Medical College.....	14
Medical College of Virginia.....	1
Williams College, Massachusetts.....	2
Charity Hospital Medical College.....	4
Washington Medical College, Baltimore.....	3
Georgetown Medical College.....	6
Lind University, Illinois.....	1
Iowa State University.....	3
Medical Department, Transylvania.....	1
New Orleans Medical School.....	1
University of Boston.....	4
University of Nashville.....	2
Yale Medical College.....	9
Georgia Medical College.....	1
Metropolitan Medical College.....	3
University of Geneva, New York.....	4
Medical and Surgical College, New York...	1
Howard University, D. C.....	3
Woman's Medical College, New York.....	1
Hygeo-Therapeutic College, N. J.....	4
Castleton University, S. C.....	1
Baltimore Medical College.....	1
University of Virginia.....	2
New York Medical College.....	3
University of Hudson.....	1
American Health College, Ohio.....	2
Savannah Medical College.....	1
Vermont Medical College.....	1
Unintelligible.....	5

1610

Graduates of schools in foreign countries:—

NAMES OF SCHOOLS.	NO. OF GRADUATES.
University of Edinburgh.....	2
University of Glasgow.....	4
University of Wurzburg.....	9

University of Dublin.....	1
University of Göttingen, Germany.....	7
University of Tübingen, Germany.....	6
University of Marburg, Germany.....	1
University of Freiburg, Germany.....	1
University of Leipsic, Germany.....	2
University of Vienna, Austria.....	3
University of Frederick Wilhelm.....	2
University of Victoria, Canada.....	3
University of Jena, Germany.....	3
Julio Hospital Medical College.....	1
Georgia Augusta Medical College.....	1
Monz Medical College, France.....	1
Queen's College, Ireland.....	3
Gratz Medical College, Austria.....	1
Zurich Medical College, Switzerland.....	1
Royal College of Surgeons.....	2
Hebamman Medical College.....	1
Midwife Institute, Baden.....	1
Berlin Anatomical Academy.....	1
University of Berlin.....	2
University of Heidelberg.....	1
Germania University.....	1
Royal College of Medicine, Edinburgh.....	2
College of Phys. and Surg., London.....	1
Trinity College, Toronto, Canada.....	2
College of Herford, Germany.....	1
Germania Medical College, Vienna.....	1
Academia Ludoviciana.....	1
Ludwig Maximilian University.....	1
Royal College of Surgeons, Ireland.....	6
Royal Bavarian School of Midwifery.....	2
Medical College of Stuttgart, Germany.....	1
University of Strasburg.....	1
Eclectic Medical College, Toronto.....	1
University of Prague.....	2
University of Geisen, Germany.....	1
University of Kiel.....	1
University of Amsterdam.....	1
M'Gill University, Canada.....	1
Vienna Medical College.....	1
University of Buda, Pesth.....	1
Aberdeen Medical College.....	1
University of Erlangen.....	1
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about my duty. I am in so many ways intimately attached to Austria and Vienna that I was forced to decline, notwithstanding the brilliant offers, and, I might well say, notwithstanding the great honor and distinction of my teacher selecting me out of all his pupils as his successor; and I must confess that, for a moment, it seemed to me hard to refuse him anything. But I was soon resolved, and stay here with all my heart."

The students of the Vienna University had a torchlight procession in honor of this action of their Professor. The medical world will be sorry, because Billroth would have had a far larger field and greater means for exhibiting his skill in Berlin, which at present is ahead of Vienna.

Effects of Intermarriage.

Some recent researches of Dr. Herrmann show that there is no connection between the number of marriages between blood-relations and the number of instances of cretinism. Marriages between blood-relations appear rather to diminish than to increase the tendency already present of producing cretinism. On the other hand, idiotism may be, and appears to be, produced by such marriages; e. g., Howe records seventeen cases of marriages between blood-relations producing 95 children, of whom 45 were idiots, 12 scrofulous, 1 deaf, and 1 dwarfed.

Items.

—The ethnological museum organized at the "Trocadero," in Paris, possesses 44,000 specimens.

—The cinchona bark plantations in the Island of Jamaica were able to supply, last year, 24,000 pounds of bark.

—It has been found that the current between the poles of an electro-magnet has the property of delaying fermentation and putrefaction.

—The most certain remedy for toothache, and one that is said never to fail, is the following: Saturate a mixture of alcohol and ether with N_2O ; a few drops of this applied, on cotton, to the tooth stops the pain immediately.

—The vacancy created by the resignation of Professor Langenbeck from the chair of surgery, and as director of the surgical clinic at the University in Berlin, will probably be filled by the appointment of Professor Volkmann, of Halle. He is, at least, the only one who will be nominated for this important position by the Medical Faculty of the University. Professor Volkmann has especially become known by his "Sammlung Klinischer Vorträge" (collection of clinical lectures,) which have found many readers also on this side of the Atlantic.

DEATHS.

BREHMAN.—Suddenly, on July 20th, 1882, of neuralgia of the heart, Dr. G. Edmund Brehman, of Altoona, Pa.

ELLIOT.—At Peabody, Mass., July 20th, 1882, Dr. Daniel M. Elliot, aged 39 years.

Professor Billroth Declines.

In June last Professor v. Langenbeck, who, as well known, has resigned his position as Professor of Surgery at the University of Berlin, wrote to Prof. Billroth, in Vienna, offering him the chair Langenbeck for so many years occupied. Billroth declined. The Royal Society of Physicians in Vienna held a meeting and authorized Professor Dittel to thank Billroth, in the name of his colleagues, for having preferred Vienna to Berlin. To this Prof. Billroth gave the following answer, which we translate from the last number of the *Deutsche Med. Zeitung*:—

"I thank you for your kind expressions, and can only assure you that I did not reflect long